Confidential - Tight Hole

Form OGC-1a

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

(Other instructions on reverse side)

5. Lease Designation and Serial No.: N/A Fee

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

6. If Indian, Allottee or Tribe Name: N/A

1a. Type of Work: DRILL [XX] DEEPEN [ ] PLUG BACK [ ]

7. Unit Agreement Name: Caballo Unit

b. Type of Well: Oil Well [X] Gas Well [ ] Other

8. Farm or Lease Name: Caballo Unit Federal

2. Name of Operator: Quintana Petroleum Corp.

9. Well No.: #2-8

3. Address of Operator: 1050 17th Street, Suite 400, Denver, CO 80265

10. Field and Pool, or Wildcat: ~~Caballo Field~~ Wildcat

RECEIVED
JUN 20 1988
DIVISION OF OIL, GAS & MINING

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface: 2290' FSL and 1750' FEL (NE NW SE)
At proposed prod. zone: Sec. 8, T36S - R23E

11. Sec., T., R., M., or Blk. and Survey or Area: Sec. 8, T36S - R23E

14. Distance in miles and direction from nearest town or post office*: 25 miles southeast of Monticello, Utah

12. County or Parrish: San Juan 13. State: Utah

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. line, if any): 350'

16. No. of acres in lease: 200

17. No. of acres assigned to this well: 40

18. Distance from proposed location* to nearest well, drilling, completed, or applied for, on this lease, ft.: None

19. Proposed depth: 6820' Akah

20. Rotary or cable tools: Rotary

21. Elevations (Show whether DF, RT, GR, etc.): 6378' GR

22. Approx. date work will start*: July 1, 1988

23. PROPOSED CASING AND CEMENTING PROGRAM

Size of Hole	Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
12-1/4"	9-5/8"	36#	0-2260'	525 sx or suffic to circ to surf
8-3/4"	5-1/2"	15.5#	0-5620'	50 sx or suffic to cover zones of interest

Quintana Petroleum Corp. proposes to drill a well to 6820' to test the Ismay and Desert Creek Formations. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per State of Utah requirements.

See Onshore Order No. 1 attached.

We realize that this location is staked at non-standard spacing in accordance with the spacing rules of the State of Utah, Division of Oil, Gas and Mining. This location was staked based on seismic data and we request that you grant Quintana Petroleum permission to drill this well. Quintana Petroleum is the unit operator of the Caballo Unit.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

Signed: Lisa G. Green Title: Consultant for Quintana Petroleum Corp. Date: June 16, 1988

(This space for Federal or State office use)

Permit No. 43-037-31434 Approval Date: APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING

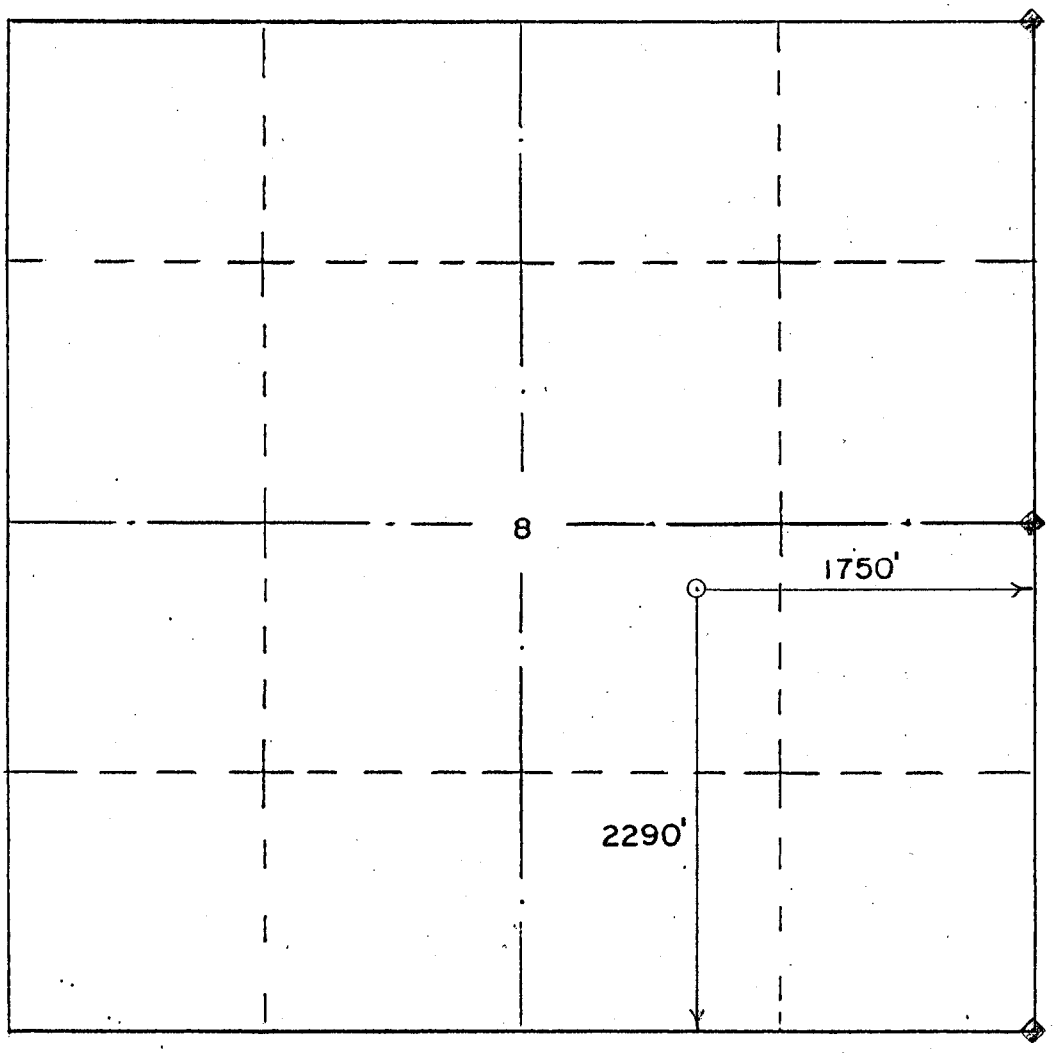
Approved by: Title: Date:

Conditions of approval, if any:

DATE: 6-28-88
BY: John R. Baza
WELL SPACING: R615-2-3

*See Instructions On Reverse Side

WELL LOCATION AND ACREAGE DEDICATION PLAT



WELL LOCATION DESCRIPTION:
Quintana Petroleum
Caballo Federal #2-8
2290'FSL & 1750'FEL
Section 8, T.36 S., R.23 E., SLM
San Juan County, Utah
6378' ground elevation
Reference: SP 118, line 2B, Az. 134 40'35",
753' feet, 6388'grd.

REGISTERED LAND SURVEYOR No. 5705 STATE OF COLORADO

The above plat is true and correct to my knowledge and belief.

12 June 1988

Gerald G. Huddleston, LS

213 East Montezuma Avenue • Cortez, Colorado 81321 • 303-565-3330

Confidential - Tight Hole

Form 3160-3
(November 1983)
(formerly 9-331C)

RECEIVED
JUN 20 1988
OIL, GAS & MINING

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.	N/A
6. IF INDIAN, ALLOTTEE OR TRIBE NAME	N/A
7. UNIT AGREEMENT NAME	Caballo Unit
8. FARM OR LEASE NAME	Caballo Unit Federal
9. WELL NO.	#2-8
10. FIELD AND POOL, OR WILDCAT	Caballo Field
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA	Sec. 8, T36S, - R23E
12. COUNTY OR PARISH	San Juan
13. STATE	Utah

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER SINGLE ZONE [X] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: Quintana Petroleum Corp.

3. ADDRESS OF OPERATOR: 1050 17th Street, Suite 400, Denver, CO 80265

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 2290' FSL and 1750' FEL (NE NW SE)
At proposed prod. zone: Sec. 8, T36S - R23E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 25 miles southeast of Monticello, Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	350'	16. NO. OF ACRES IN LEASE: 200	17. NO. OF ACRES ASSIGNED TO THIS WELL: 40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	None	19. PROPOSED DEPTH: 6820'	20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 6378' GR

22. APPROX. DATE WORK WILL START*: July 1, 1988

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	9-5/8"	36#	0-2260'	525 sx or suffic to circ to surf
8-3/4"	5-1/2"	15.5#	0-5620'	50 sx or suffic to cover zones of interest

Quintana Petroleum Corp. proposes to drill a well to 6820' to test the Ismay and Desert Creek Formations. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per State of Utah requirements.

See Onshore Order No. 1 attached.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED Lisa B. Green TITLE Consultant for Quintana Petroleum Corp. DATE June 16, 1988

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

QUINTANA PETROLEUM CORPORATION
1050 SEVENTEENTH STREET
SUITE 400
DENVER, COLORADO 80265
(303) 628-9211

June 3, 1988

Bureau of Land Management
P. O. Box 7
Monticello, UT 84535

Re: Caballo Unit Federal #2-8
NE NW SE Section 8, T36S-R23E
San Juan County, Utah

Gentlemen:

This letter is to inform you that Permitco is authorized to act as Agent and to sign documents on behalf of Quintana Petroleum Corporation when necessary for filing county, state and federal permits including Onshore Order No. 1 Right-of-Way applications, etc. for the referenced well.

It should be understood that Permitco is acting as Agent only in those matters stated above and is not responsible for drilling, completion, production or compliance with regulations.

Quintana Petroleum Corporation agrees to accept full responsibility for operations conducted in order to drill, complete and produce the above-mentioned well.

Very truly yours,

John W. Wessels

John W. Wessels
District Operations Manager

cc: Permitco - Lisa Green
BLM
P. O. Box 970
Moab, UT 84532

jp

CONFIDENTIAL - TIGHT HOLE

ONSHORE OIL & GAS ORDER NO. 1

. Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

CABALLO UNIT FEDERAL #2-8
2290' FSL and 1750' FEL
Section 8, T36S - R23E
San Juan County, Utah

Prepared For:

QUINTANA PETROLEUM CORP.

By:

PERMITCO INC.
P.O. Box 44065
Denver, Colorado 80201-4065
303/322-7878

Copies Sent To:

4 - BLM - Moab, Utah
3 - Natural Resource - Moab, UT
1 - Div. of Oil, Gas & Mining - SLC, Utah
3 - Quintana Petroleum Corp. - Denver, CO

Permitco

Permitco Incorporated
A Petroleum Permitting Company

ONSHORE ORDER NO.
Quintana Petroleum Corp.
Caballo Unit Federal 2-8
2290' FSL and 1750' FEL
Sec. 8, T36S-R23E
San Juan County, Utah

CONFIDENTIAL-TIGHT HOLE

DRILLING PROGRAM

ONSHORE OIL & GAS ORDER NO. 1
Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR 3100), Onshore Oil and Gas Order No. 1, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.

1. The surface formation and estimated formation tops to be encountered are as follows:

Formation	Depth	Subsea
Dakota	Surface	
Chinle	2243'	+4147'
Shinarump	2885'	+3499'
Hermosa	5124'	+1260'
Ismay	6454'	- 70'
Hovenweep Shale	6590'	- 206'
Lower Ismay	6628'	- 244'
Gothic Shale	6680'	- 296'
Desert Creek	6711'	- 327'
Chimney Rock Shale	6788'	- 404
Akah	6811'	- 427'
T.D.	6820'	- 436'

2. The estimated depths at which oil, gas, water or other mineral bearing zones are expected to be encountered are as follows:

Substance	Formation	Anticipated Depth
Oil	Upper Ismay	6454'
Oil	Desert Creek	6711'

All fresh water and prospectively valuable minerals (as described by BLM at onsite) encountered during drilling, will be recorded by depth cased and cemented. All oil and gas shows will be tested to determine commercial potential.

ONSHORE ORDER NO.
Quintana Petroleum Corp.
Caballo Unit Federal 2-8
2290' FSL and 1750' FEL
Sec. 8, T36S-R23E
San Juan County, Utah

CONFIDENTIAL-TIGHT HOLE

DRILLING PROGRAM

3. Pressure control equipment will consist of a 10", 3000# BOP. (See BOP Diagram attached.)

BOP systems will be consistent with API RP 53. Pressure tests will be conducted before drilling out from under all casing strings which are set and cemented in place. Blowout preventer controls will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. Preventers will be pressure tested before drilling casing cement plugs.

4. a. Casing

The proposed casing program is as follows:

Purpose	Depth	Hole Size	O.D.	Wt.	Grade	Type	New or Used
Conductor	0-40'	17-1/2"	13-3/8"	if needed			
Surface	0-2260'	12-1/4"	9-5/8"	36#	K-55	ST&C	New
Produc.	0-5620'	8-3/4"	5-1/2"	15.5#	K-55	LT&C	New
Produc.	5620-6820	8-3/4"	5-1/2"	17#	K-55	LT&C	New

b. Cement

The cementing program will be as follows:

Surface	Type and Amount
0-2260'	525 sx Lite weight (1.84 ft3/sk; slurry volume 966 ft3; 12.4 ppg) followed by 200 sx Class "B" (1.18 ft3 sk; slurry volume 236 ft3; 15.6 ppg) - or equivalent type slurry sufficient to circulate to surface.
Production	**Type and Amount**
	50 sx pozmix "A" (1.6 ft3/sk; slurry volume 80 ft3; 12.0 ppg) followed by 290 sx thixotropic cmt w/additives (1.48 ft3/sk; slurry volume 429 ft3; 15.0 ppg) - or equivalent type slurry.

ONSHORE ORDER NO.
Quintana Petroleum Corp.
Caballo Unit Federal 2-8
2290' FSL and 1750' FEL
Sec. 8, T36S-R23E
San Juan County, Utah

CONFIDENTIAL-TIGHT HOLE

DRILLING PROGRAM

Anticipated cement tops will be reported as to depth, not the expected number of sacks.

c. Auxiliary Equipment will be as follows:

1. Kelly cock.

2. Float above the bit.

3. A sub with a full opening valve will be on the floor when the kelly is not in use.

4. Monitoring of the system will be done visually.

5. Drilling fluid will be as follows:

Interval	Mud Type	Mud Wt.	Visc.	F/L	PH
0-2260'	Gel/Lime	8.3-8.6	27-35	N/C	N./C
2260-5100'	Water w/Gel Lime Sweeps	8.4-8.6	27-35	N/C	8.5-8.9
5100-T.D.	Dispersed	9.0-10.5	35-45	8-10cc	10+

Blooie line will be misted to reduce fugative dust when air drilling.

6. Coring, logging and testing programs are as follows:

a. No cores are anticipated.

b. The logging program will consist of the following: A DIL/SFL or DLL/MSFL and BHC/Sonic from base of surface casing to T.D. A CNL/Lithodensity will be a minimum run over zones of interest.

c. Drill Stem Tests may be run in the Ismay and Desert Creek formations if shows warrant.

Permitco

Permitco Incorporated
A Petroleum Permitting Company

ONSHORE ORDER NO.
Quintana Petroleum Corp.
Caballo Unit Federal 2-8
2290' FSL and 1750' FEL
Sec. 8, T36S-R23E
San Juan County, Utah

CONFIDENTIAL-TIGHT HOLE

DRILLING PROGRAM

Whether the well is completed as a dry hole or as a producer, "Well Completion or Recompletion Report and Log" (Form 3160-4) will be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3164. Two copies of all logs, core descriptions, core analysis, well-test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. Samples (cuttings, fluids, and/or gases) will be submitted when requested by the District Manager.

7. Abnormal conditions, bottom hole pressures and potential hazards.

   a. The maximum bottom hole pressure to be expected is 3700 psi.

8. Anticipated Starting Dates and Notifications of Operations

   a. Quintana Petroleum Corp. plans to spud the Caballo Unit Federal #2-8 on approximately July 1, 1988 and intends to complete the well within approximately one month after the well has reached T.D.

   b. Written notification in the form of a Sundry Notice will be submitted to the Division of Oil, Gas & Mining within twenty-four (24) hours after spudding. If the spudding occurs on a weekend or holiday, the written report will be submitted on the following regular work day.

   c. Immediate Report: Spills, blowouts, fires, leaks, accidents, or any other unusual occurrences shall be promptly reported to the Div. of Oil, Gas & Mining in accordance with requirements of NTL-3A.

   d. Should the well be successfully completed for production, the Div. of Oil, Gas & Mining will be notified when the well is placed in a producing status. Such notification will be sent by telegram or other written communication, not later than five (5) business days following the date on which the well is placed on production.

ONSHORE ORDER NO
Quintana Petroleum Corp.
Caballo Unit Federal 2-8
2290' FSL and 1750' FEL
Sec. 8, T36S-R23E
San Juan County, Utah

CONFIDENTIAL-TIGHT HOLE

DRILLING PROGRAM

e. A "Subsequent Report of Abandonment" (Form 3160-5) will be filed with the Div. of Oil, Gas & Mining within thirty (30) days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restoration. Final abandonment will not be approved until the surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the surface owner.

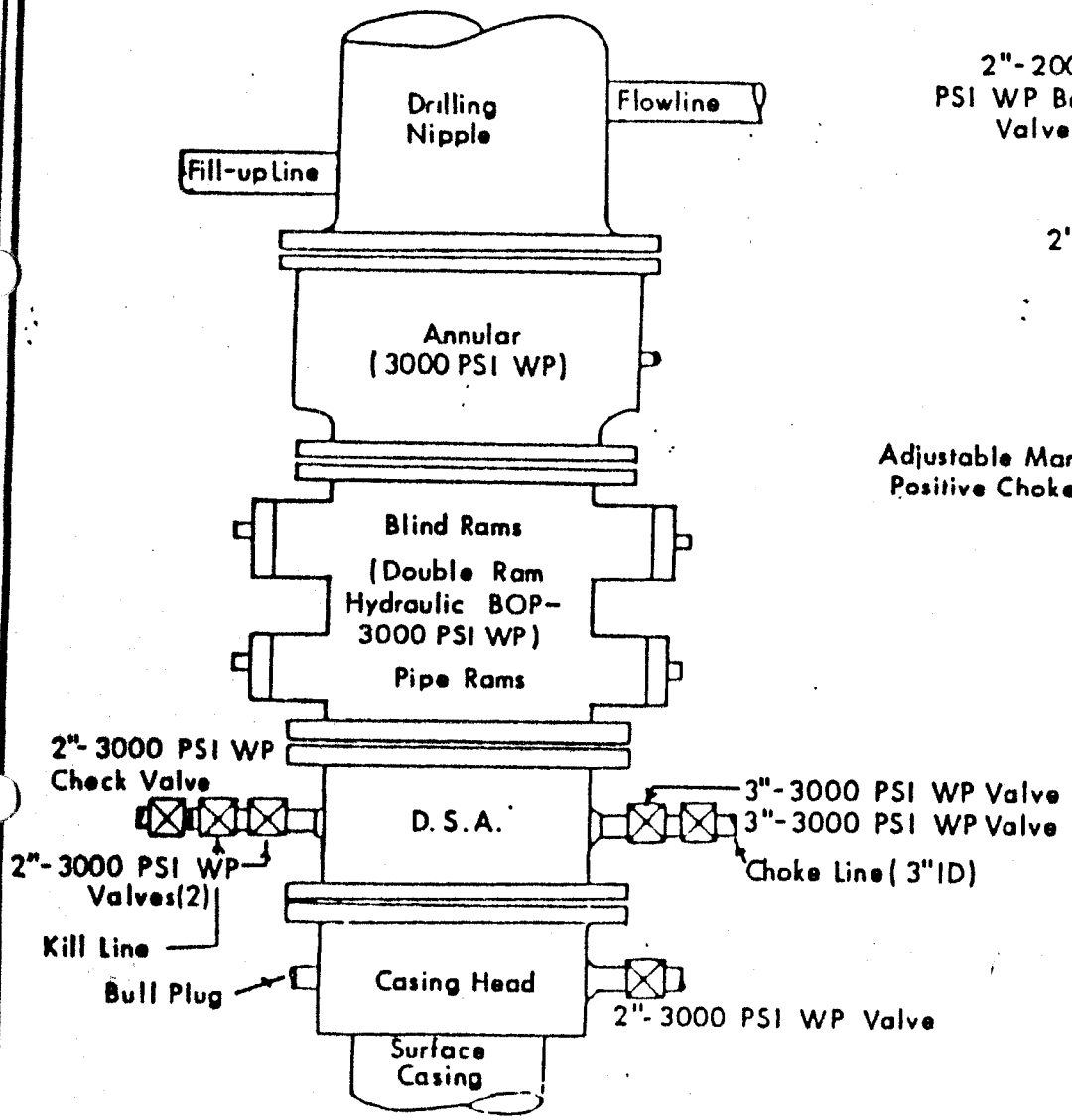
f. Approval to vent/flare gas during initial well evaluation will be obtained from the Div. of Oil, Gas & Mining. This preliminary approval will not exceed 30 days or 50 MMCF gas. Approval to vent/flare beyond this initial test period will require approval from the Div. of Natural Resources .

g. Upon completion of approved plugging, a regulation marker will be erected in accordance with 43 CFR 3162.6. The marker will be constructed as follows: Above ground pipe. The top of the marker will be closed or capped.

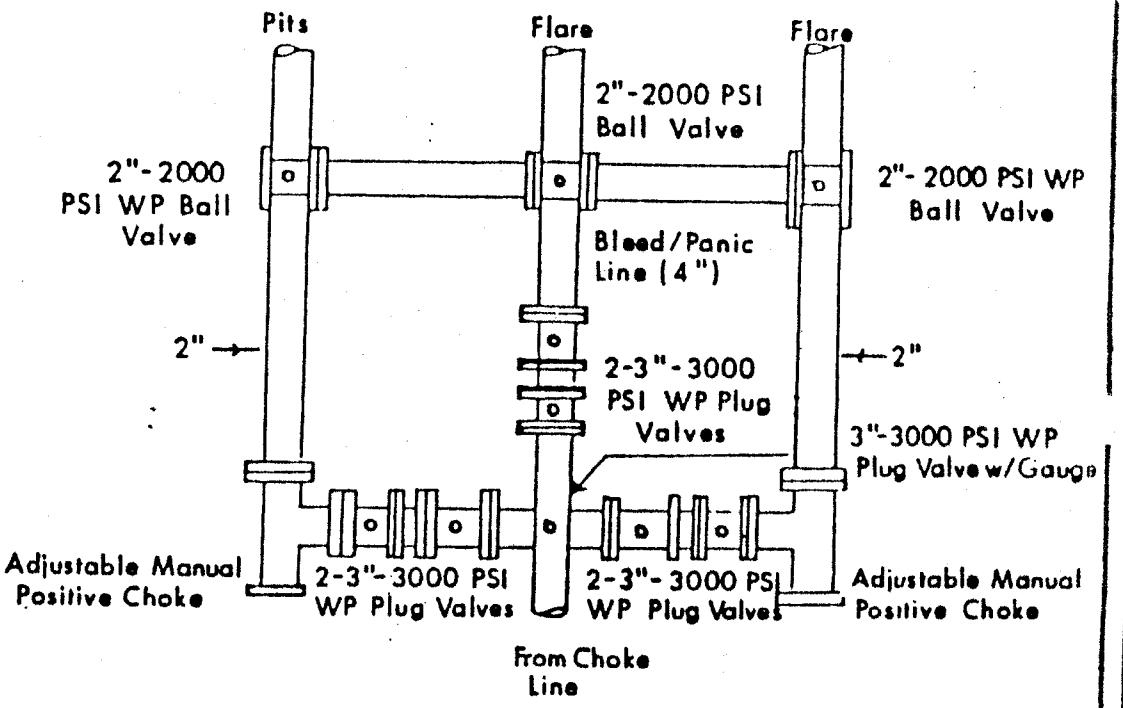
h. The following minimum information will be permanently placed on the marker with a plate, cap, or beaded-on with a welding torch:

"Fed" or Ind", as applicable. "Well number, location by 1/4 1/4, section, township and range". "Lease number".

BOP SCHEMATIC
3000 PSI WORKING PRESSURE



PLAN VIEW CHOKE MANIFOLD



The hydraulic closing unit will be located more than 30' from the wellhead. Choke & bleed/panic lines will go to the pit and flare. All connections in choke line and manifold will be flanged or welded. All flanges should be ring joint gasket type. All turns in lines shall be constructed using targeted 90° tees or block ells. All lines shall be anchored.

Quintana *Denver, Colorado*

BOPE SCHEMATIC

ONSHORE ORDER NO.
Quintana Petroleum Corp.
Caballo Unit Federal 2-8
2290' FSL and 1750' FEL
Sec. 8, T36S - R23E
San Juan County, Utah

CONFIDENTIAL-TIGHT HOLE

SURFACE USE PLAN

ONSHORE OIL & GAS ORDER NO. 1

Thirteen Point Surface Use Plan

1. Existing Roads

a. The proposed well site is located 25 miles southeast of Monticello, Utah.

b. Directions to the location from Blanding, Utah are as follows:

Go north on Highway 191 for 8.9 miles. Turn east onto the Devils Canyon Road (Alkali #204) and proceed 3.0 miles in a southeasterly direction to a fork in the road. Turn right onto the new access (flagged) and proceed approximately 1700 feet to the location.

c. The roads in the area are primarily county roads. See Map #1.

d. Improvement to the existing access will not be necessary.

e. All existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well.

f. An encroachment permit will be obtained from the San Juan County Road Department, 801/587-2231, ext. 43.

2. Planned Access Roads

a. There will be approximately 1800 feet of new access crossing private land. This new access will be built with a running surface of approximately 18 feet with a total disturbed width of approximately 30 feet. If production is established, the road will be upgraded as per private surface owner's requirements.

c. The grade will be approximately 5%.

Permitco

Permitco Incorporated
A Petroleum Permitting Company

ONSHORE ORDER NO.
Quintana Petroleum Corp.
Caballo Unit Federal 2-8
2290' FSL and 1750' FEL
Sec. 8, T36S - R23E
San Juan County, Utah

CONFIDENTIAL-TIGHT HOLE

SURFACE USE PLAN

2. Planned Access Roads (cont.)

d. No turnouts will be installed. Culverts will be installed as needed. If required, a culvert will be installed where the new access road leaves the County Road in Section 8, T36S - R23E. Drainage will be installed as needed.

e. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance by the surface owner.

3. Location of Existing Wells Within a 1-Mile Radius of the Proposed Location. (See Map #1).

a. Water Wells - none

b. Injection or disposal wells - none

c. Producing Wells - two

d. Drilling Wells - none

4. Location of Tank Batteries and Production Facilities.

a. All permanent structures (onsite for six months or longer) constructed or installed (including oil well pump jacks) will be painted at the discretion of the operator.

b. If a tank battery is constructed on this lease, it will be surrounded by a dike of sufficient capacity to contain 1-1/2 times the storage capacity of the largest tank.

c. Any necessary pits will be properly fenced with four strands barbed wire to prevent any wildlife entry.

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A Petroleum Permitting Company

ONSHORE ORDER NO
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2290' FSL and 1750' FEL
Sec. 8, T36S - R23E
San Juan County, Utah

CONFIDENTIAL-TIGHT HOLE

SURFACE USE PLAN

5. Location and Type of Water Supply

a. All water needed for drilling purposes will be obtained from a private source.

b. Water will be trucked to location over the county roads in the area.

c. No water well is to be drilled on this lease.

d. Use of water for this operation will approved by obtaining a temporary use permit from the Utah State Engineer, in Price, Utah, 801/637-1303.

e. Water obtained on private land, or land administered by another agency, will require approval from the owner or agency for use of the land.

6. Source of Construction Material

a. Any road surfacing material will be obtained from a commercial source. Pad construction material will be native.

7. Methods for Handling Waste Disposal

a. The reserve pit berm will be lined with commercial bentonite.

b. Three sides of the reserve pit will be fenced with four strands of barbed wire before drilling starts. The fourth side will be fenced as soon as the drilling is completed. The fence will be kept in good repair while the pit is drying.

c. All trash will be contained in a trash cage and hauled to an approved landfill upon completion of drilling operations.

d. At the request of Quintana Petroleum Corp., no burning will be allowed on this location.

Permitco

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ONSHORE ORDER NO.
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Sec. 8, T36S - R23E
San Juan County, Utah

CONFIDENTIAL-TIGHT HOLE

SURFACE USE PLAN

8. Ancillary Facilities

a. There are no airstrips, camps, or other facilities planned during the drilling of the proposed well.

9. Well Site Layout

a. See Diagram #1 for rig layout. See Diagram #2 for cross section of drill pad. See Diagram #3 for cuts and fills.

b. The location of mud tanks; reserve pit, trash cage; pipe racks; living facilities and soil stockpiles will be shown on Diagrams #1 and #3. The location will be laid out and constructed as discussed during the predrill conference.

c. Topsoil material will be removed from the location if requested by the surface owner.

d. Access to the well pad will be from the east side of the well pad.

10. Reclamation

a. Immediately upon completion of drilling, all trash and debris will be collected from the location and surrounding area. All trash and debris, materials, trash and junk not required for production.

b. Before any dirt work to restore the location takes place, the reserve pit will be completely dry.

c. All disturbed areas will be recontoured to approximate the natural contours.

d. Any stockpiled topsoil will be spread evenly over the disturbed contours.

e. The location will be reclaimed with a seed mixture as specified by the surface owner.

Permitco

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A Petroleum Permitting Company

ONSHORE ORDER NO
Quintana Petroleum Corp.
Caballo Unit Federal 2-8
2290' FSL and 1750' FEL
Sec. 8, T36S - R23E
San Juan County, Utah

CONFIDENTIAL-TIGHT HOLE

SURFACE USE PLAN

10. Reclamation of Surface (cont.)

f. The reserve pit and that portion of the location and access road not needed for production and production facilities will be reclaimed.

11. a. Surface Ownership

Lloyd Stevens
4113 S. 1175 E.
Salt Lake City, UT
801/266-1962

John Shumway - Surface Tenant
P.O. Box 225
Blanding, UT 84511
801/678-2556

b. Mineral Ownership

Private Minerals within a Federal Unit

12. Other Information

a. The dirt contractor will be provided with an approved copy of the surface use plan.

g. An archeological study was conducted by LaPlata Archaeological Consultants. No significant cultural resources were found and clearance is recommended. A copy of this report will be submitted directly by LaPlata Archeological Consultants.

13. Lessee's or Operator's Representative and Certification

Permit Matters
PERMITCO INC.
Lisa L. Green
P.O. Box 44065
Denver, CO 80201-4065
303/322-7878

Drilling & Completion Matters
QUINTANA PETROLEUM CORP.
1050-17th St.
Suite 400
Denver, CO 80265
303/628-9211 (W) -
303/969-9468 (H) - Scott Kimbrough

Permitco
Permitco Incorporated
A Petroleum Permitting Company

ONSHORE ORDER NO.
Quintana Petroleum Corp.
Caballo Unit Federal 2-8
2290' FSL and 1750' FEL
Sec. 8, T36S - R23E
San Juan County, Utah

CONFIDENTIAL-TIGHT HOLE

SURFACE USE PLAN

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Quintana Petroleum Corp. and its contractors and subcontractors in conformity with the plan and the terms and conditions under which it is approved.

This statement is subject to the provision of 18 U.S.C. 1001 for the filing of a false statement.

June 16, 1988
Date:

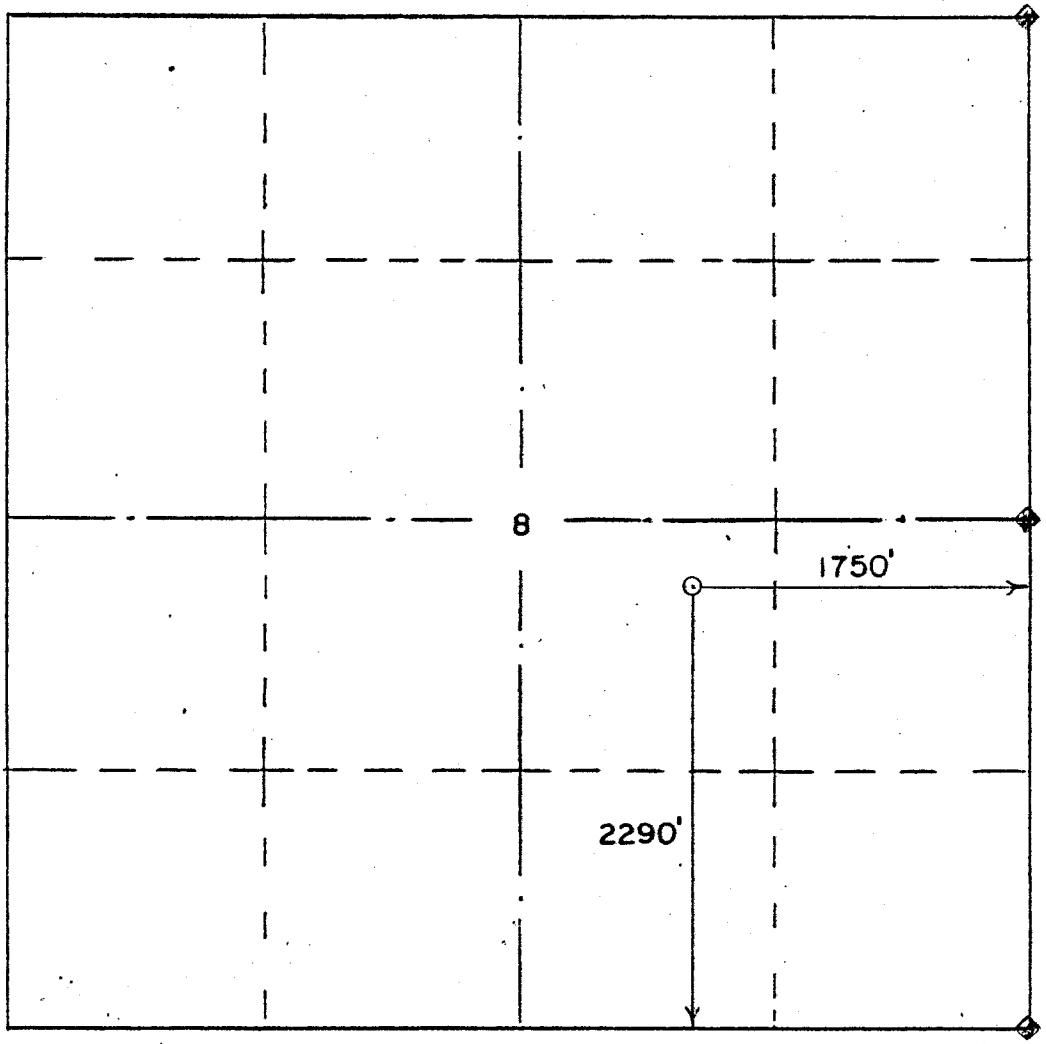
Lisa L. Green - PERMITCO INC.
Authorized Agent for:
QUINTANA PETROLEUM CORP.

Permitco

Permitco Incorporated
A Petroleum Permitting Company

PLAT #1

WELL LOCATION AND ACREAGE DEDICATION PLAT



WELL LOCATION DESCRIPTION:
Quintana Petroleum
Caballo Federal #2-8
2290'FSL & 1750'FEL
Section 8, T.36 S., R.23 E., SLM
San Juan County, Utah
6378' ground elevation
Reference: SP 118, line 2B, Az. 134 40'35",
753' feet, 6388'grd.

The above plat is true and correct to my knowledge and belief.

12 June 1988

Gerald G. Huddleston, LS

213 East Montezuma Avenue • Cortez, Colorado 81321 • 303-565-3330

R23E

T 36 S

N

Access approach to be built off county road

Bullpup Canyon

ALKALI POINT

MUSTANG MESA

Alkali Canyon

Recapture

Devil

ALKALI

MAP #1
Quintana Petroleum Corp.
Caballo Federal #2-8
2290' FSL and 1750' FEL
Sec. 8, T36S - R23E
San Juan County, Utah

⊙ Proposed Location
——— Proposed Access Route
- - - - New Access to be built
● Producing Wells

Scale: 1" = 50'

DIAGRAM #1
Rig Layout

QUINTANA PETROLEUM CORP.
CABALLO FEDERAL #2-8
2290' FSL and 1750' FEL
Sec. 8, T36S - R23E
San Juan County, Utah

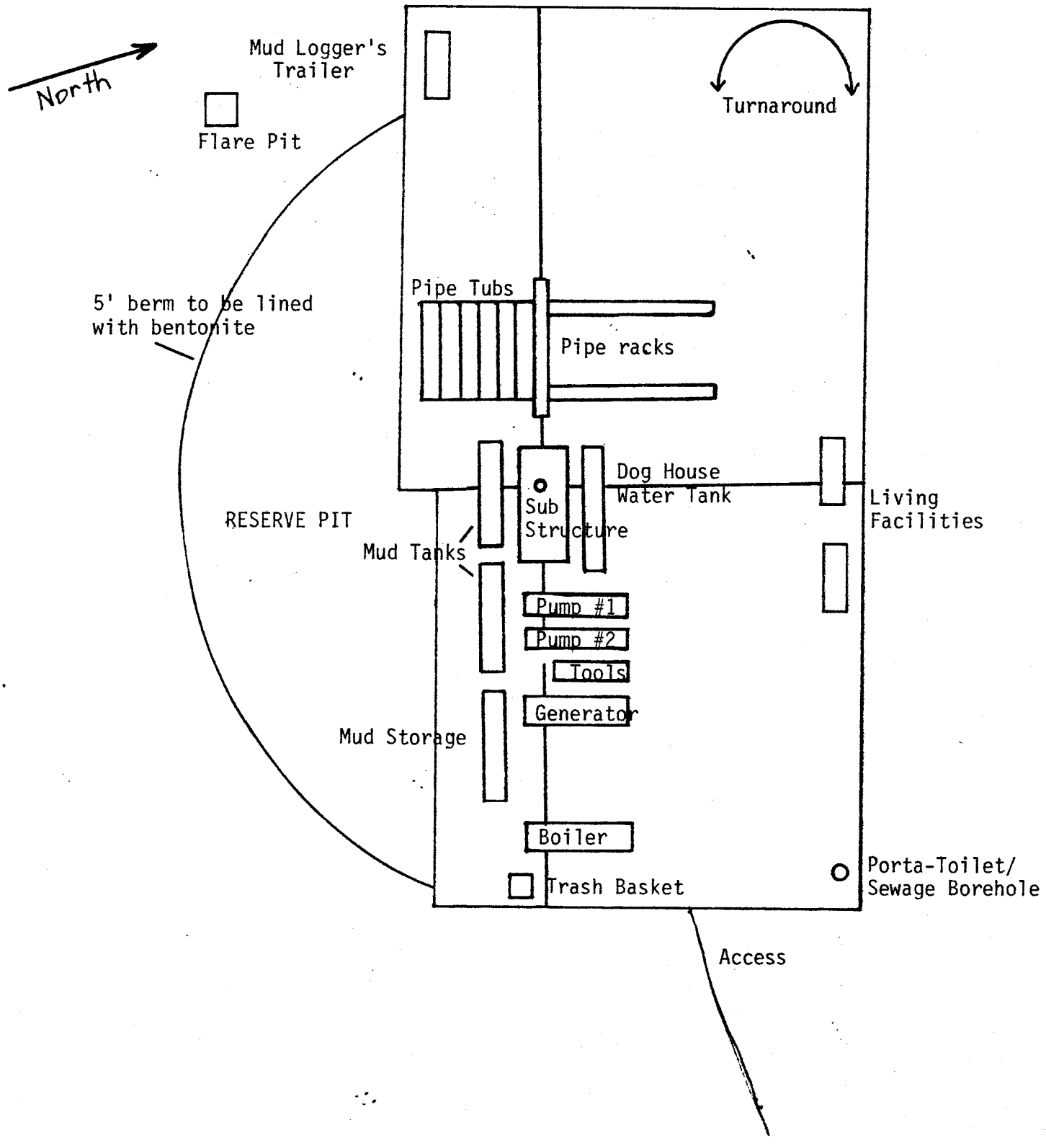


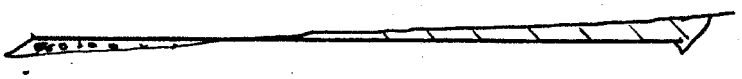
DIAGRAM #2

Cross Section

Caballo Federal 2-8

Cut \\\
Fill

1"=50' Horz. & Vert.



C^{L} C^{R}

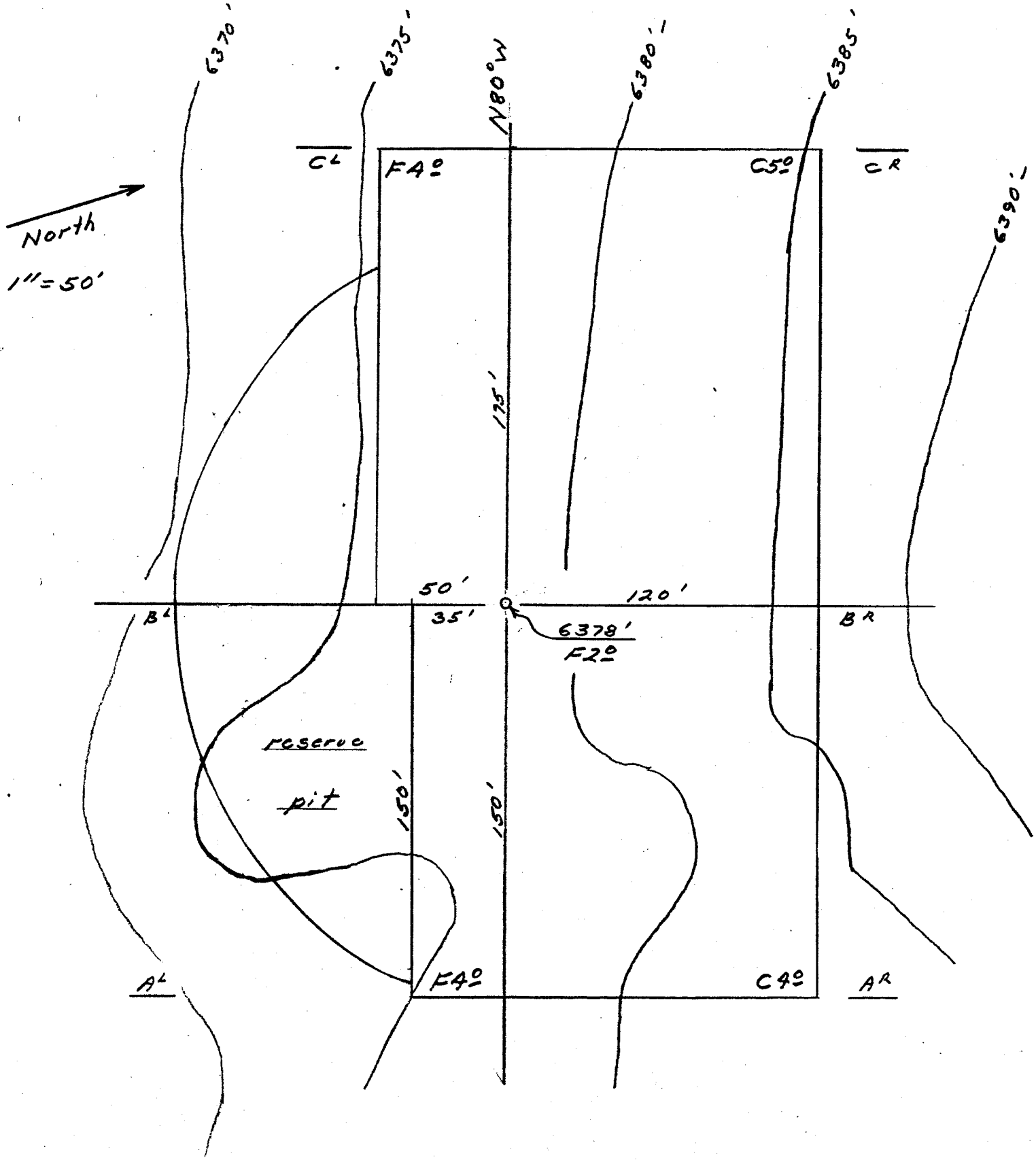
B^{L} B^{R}

A^{L} A^{R}

DIAGRAM #3

Well Pad Plan View

Caballo Federal 2-8



DRILLING LOCATION ASSESSMENT

State of Utah
Division of Oil, Gas & Mining

OPERATOR: Quintana Petroleum Corp WELL NAME: #2-8

QTR/QTR: NE NW SE SECTION: 8 TWP: 36S RANGE: 23E

COUNTY: San Juan FIELD: 2200 F S L 1750 F E L

SFC OWNER: Lloyd Stevens (801)266/1962 LEASE #: Fee

SPACING: F SECTION LINE F QTR/QTR LINE F ANOTHER WELL

INSPECTOR: Chip Hutchinson DATE & TIME: 1 pm June 13, 1988

PARTICIPANTS: Lisa Green (Permitco), Jim Turner (Quintana), Lowell Larson. Dean McClellan, dirt contractor, Pat Hardin Archeologists Gerald Huddleston (Surveyor)

REGIONAL SETTING/TOPOGRAPHY: Mustang Flat @ 6 mi E of Blanding Flat gently sloping to South.

LAND USE

CURRENT SURFACE USE: cattle grazing

PROPOSED SURFACE DISTURBANCE: 325' X 170' pad w/ 75' x 150' x 8' pit

AFFECTED FLOODPLAINS AND/OR WETLANDS: N/A.

FLORA/FAUNA: Juniper, sage, mormon tea, grasses, gnats, Rabbit, deer

ENVIRONMENTAL PARAMETERS

GEOLOGY

SOIL TYPE AND CHARACTERISTICS: Sandy silty clay w/ unbroken sandstone outcrop.

SURFACE FORMATION & CHARACTERISTICS: Dakota w/ Red sandy soil on shallow unbroken sandstone.

EROSION/SEDIMENTATION/STABILITY: fairly stable area.

SUBSURFACE GEOLOGY

OBJECTIVE(S)/DEPTH(S): Ismay & Desert creek

ABNORMAL PRESSURES - HIGH AND LOW: Non anticipated

CULTURAL RESOURCES/ARCHAEOLOGY: Arch survey done

WATER RESOURCES: ~~Boy~~ high plateau with no substantial drainages

RESERVE PIT

CHARACTERISTICS: 250ft CRESCENT pit

LINING: Bentonite (3 lbs/sq ft) OR synthetic

MUD PROGRAM: FW gel

DRILLING WATER SUPPLY: Boyd Laws & Recapture

OTHER OBSERVATIONS: large outcrop of Rock in area of pit

Landowner or Representative not at onsite

STIPULATIONS FOR APD APPROVAL: Normal notifications -
Quintana proposes to not remove any topsoil and make a larger pit (shallow)
Pit must have 1/2 of area in cut with liner - Landowner must approve that no topsoil storage.

ATTACHMENTS

NOTICE OF STAKING
(Not to be used in place of Application to Drill Form 9-331-C)

1. Oil Well XX Gas Well ☐ Other	5. Lease Number: ML-29764 (State Lease No.)
	6. If Indian, Allottee or Tribe Name: N/A
2. Name of Operator: Quintana Petroleum Corp c/o Permitco Inc. 303/322-7878	7. Unit Agreement Name: Caballo Unit
3. Address of Operator or Agent: P.O. Box 44065 Denver, CO 80201-4065	8. Farm or Lease Name: Caballo Federal
4. Surface Location of Well (Governmental 1/4 or 1/4 1/4): 2200' FSL and 1750' FEL (NE NW SE) Shot Point #118	9. Well No.: #2-8
Attach: Topographical or other acceptable map showing location, access road, and lease boundaries.	10. Field or Wildcat Name: Caballo Field
	11. Sec., T., R., M., or Blk. and Survey or Area: Sec. 8, T36S - R23E
14. Formation Objective(s): Ismay and Desert Creek	15. Estimated Well Depth: 6840'
	12. County or Parish: San Juan
	13. State: Utah

16. To Be Completed by Operator Prior to Onsite

a. Location must staked To be done by Gerald Huddleston

b. Access Road Flagged To be done by Gerald Huddleston

c. Sketch and/or map of location, showing road, pad dimensions, reserve pit, cuts, and fills (To be provided at onsite)

17. To Be Considered By Operator Prior to Onsite

a. H_2S Potential - None

b. Private Surface Ownership Lloyd Stevens (801/266-1962) Salt Lake City

c. Cultural Resources (Archaeology) To be done by LaPlata Archeological Consultants

d. Federal Right of Way As necessary depending on actual access route

18. Additional Information

Private Surface/Fee Minerals within a Federal Unit

Lease Description

T36S - R23E

Sec. 8: SE/4 (200 acres)

17: NE NE

Unit Boundaries shown on the attached map

19. Signed Lisa L. Green Title Consultant for Quintana Petroleum Corp. Date 6/5/88

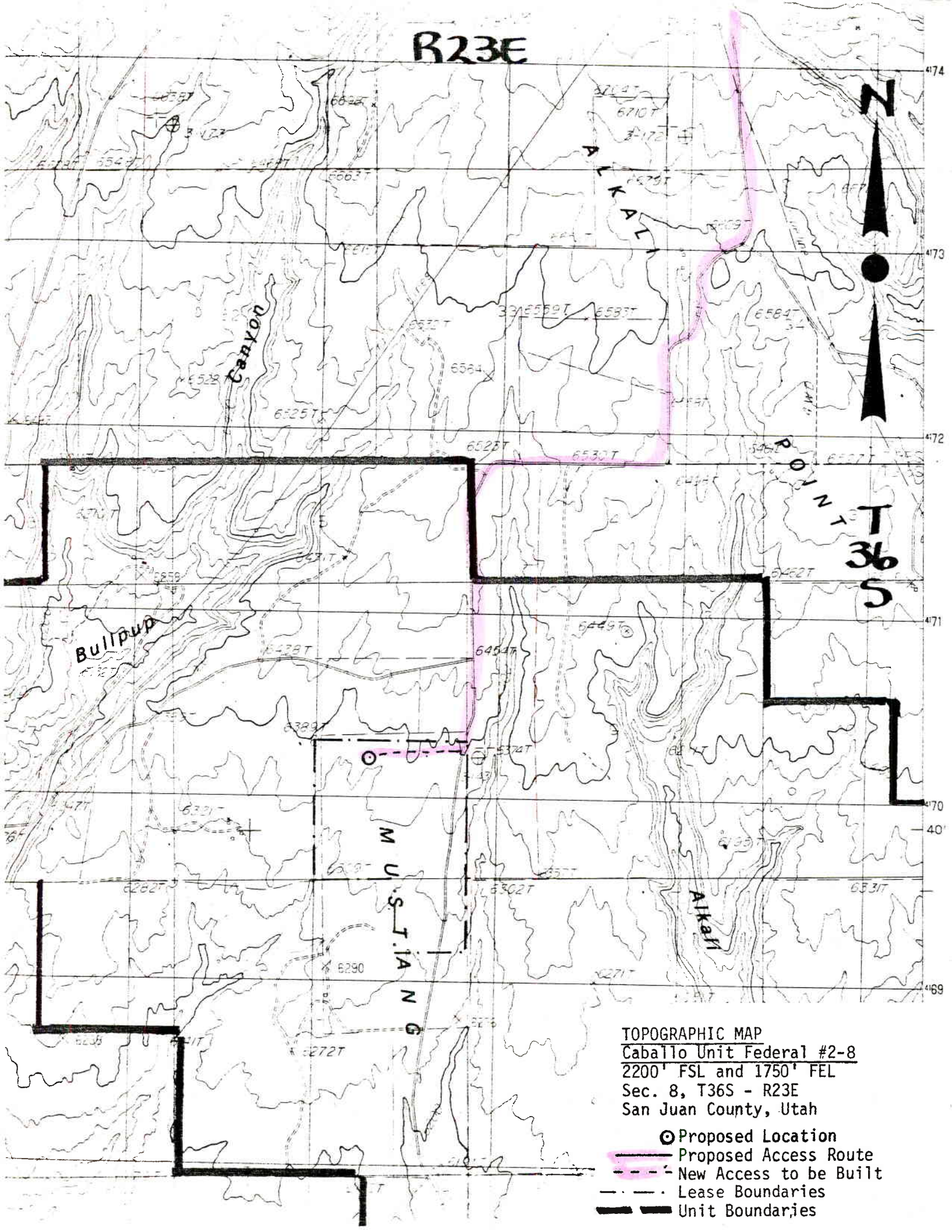
cc: 1 - BLM - Monticello, Utah
3 - BLM - Moab, Utah
1 - State of Utah - Natural Resources - Moab, Utah
1 - Quintana Petroleum Corp. - Denver, CO

RECEIVED
JUN 8 1988
DIVISION OF OIL, GAS & MINING

Chip completed pre-site 6-13-88. (obligation 172)

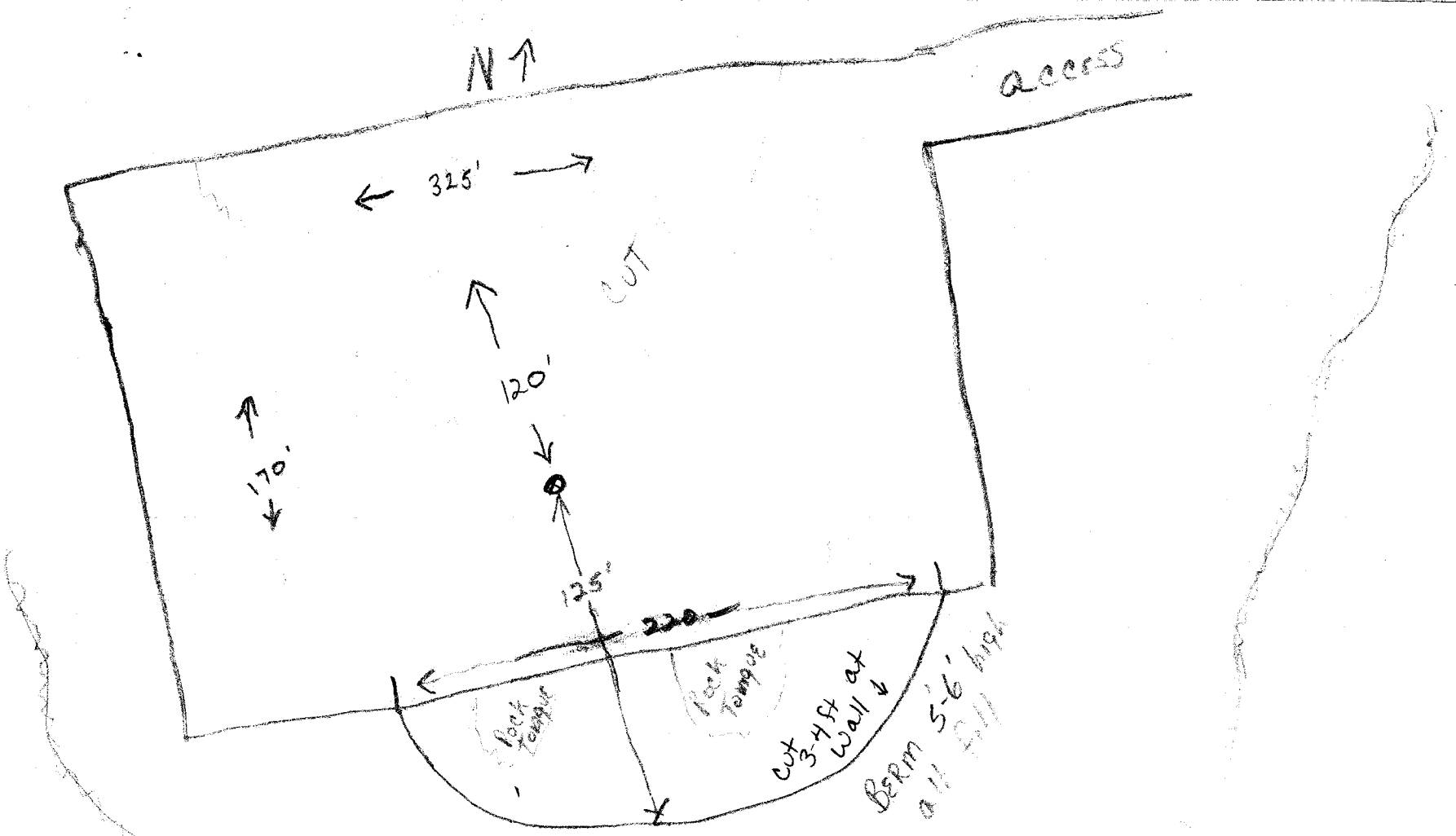
Rec'd by Chip Hutchinson

Chip planning to do pre-site 6-13-88 DTS



TOPOGRAPHIC MAP
Caballo Unit Federal #2-8
2200' FSL and 1750' FEL
Sec. 8, T36S - R23E
San Juan County, Utah

⊙ Proposed Location
——— Proposed Access Route
- - - - New Access to be Built
—·—·— Lease Boundaries
▬▬▬ Unit Boundaries


N
access
325'
120'
170'
125'
220
cut
Rock Terrace
Rock Terrace
cut 3-4 ft at wall
Berm 5-6' high

CONFIDENTIAL

OPERATOR Quintana Petroleum Corp. DATE 6/20/88

WELL NAME Caballo Unit 2-8

SEC NW SE 8 T 36S R 23E COUNTY San Juan

43-037-31434
API NUMBER

Fee
TYPE OF LEASE

CHECK OFF:

- [x] PLAT
- [x] BOND
- [x] NEAREST WELL
- [x] LEASE
- [x] FIELD
- [x] POTASH OR OIL SHALE

PROCESSING COMMENTS:

ok under Unit spacing (nearest well) ✓

need water permit

presite received 6/21/88 (Chip)

P.O.D okay as per Bfm (Theresa)

CONFIDENTIAL PERIOD EXPIRED ON 11-8-89

APPROVAL LETTER:

SPACING: [x] R615-2-3 Caballo UNIT [ ] R615-3-2

[ ] CAUSE NO. & DATE [ ] R615-3-3

STIPULATIONS:

1- Water Permit

0218T

TECHNICAL REVIEW
Engr. JRB
Geol. FJW
Surface

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
Division Director

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

June 28, 1988

Quintana Petroleum Corporation
1050 17th Street, Suite 400
Denver, Colorado 80265

Gentlemen:

Re: Caballo Unit 2-8 - NW SE Sec. 8, T. 36S, R. 23E - San Juan County, Utah
2290' FSL, 1750' FEL

Approval to drill the referenced well is hereby granted in accordance with Section 40-6-18, Utah Code Annotated, as amended 1983; and predicated on Rule R615-2-3, Oil and Gas Conservation General Rules, subject to the following stipulations:

1. Prior to commencement of drilling, receipt by the Division of evidence providing assurance of an adequate and approved supply of water as required by Chapter 3, Title 73, Utah Code Annotated.

In addition, the following actions are necessary to fully comply with this approval:

1. Spudding notification within 24 hours after drilling operations commence.

2. Submittal of an Entity Action Form within five working days following spudding and whenever a change in operations or interests necessitates an entity status change.

3. Submittal of the Report of Water Encountered During Drilling, Form OGC-8-X.

4. Prompt notification if it is necessary to plug and abandon the well. Notify John R. Baza, Petroleum Engineer, (Office) (801) 538-5340, (Home) 298-7695, or Jim Thompson, Lead Inspector, (Home) 298-9318.

5. Compliance with the requirements of Rule R615-3-22, Gas Flaring or Venting, Oil and Gas Conservation General Rules.

6. Prior to commencement of the proposed drilling operations, plans for facilities for disposal of sanitary wastes at the drill site shall be submitted to the local health department. These drilling operations and any subsequent well operations must be conducted in accordance with applicable state and local health department regulations. A list of local health departments and copies of applicable regulations are available from the Division of Environmental Health, Bureau of General Sanitation, telephone (801) 538-6121.

7. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The API number assigned to this well is 43-037-31434.

Sincerely,

R. J. Firth
Associate Director, Oil & Gas

lr
Enclosures
cc: Branch of Fluid Minerals
D. R. Nielson
8159T

Confidential LCR Light Hole

Form 3160-3
(November 1983)
(formerly 9-331C)

CONFIDENTIAL

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: Quintana Petroleum Corp.

3. ADDRESS OF OPERATOR: 1050 17th Street, Suite 400, Denver, CO 80265

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 2290' FSL and 1750' FEL (NE NW SE)
At proposed prod. zone: Sec. 8, T36S - R23E

5. LEASE DESIGNATION AND SERIAL NO.: N/A Fee

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

7. UNIT AGREEMENT NAME: Caballo Unit

8. FARM OR LEASE NAME: Caballo Unit Federal

9. WELL NO.: #2-8

10. FIELD AND POOL, OR WILDCAT: Caballo Field/wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 8, T36S, - R23E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 25 miles southeast of Monticello, Utah

12. COUNTY OR PARISH: San Juan

13. STATE: Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
350'	200	40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
None	6820'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 6378' GR

22. APPROX. DATE WORK WILL START*: July 1, 1988

23. PROPOSED CASING AND CEMENTING PROGRAM

RECEIVED
JUL 20 1988
DIVISION OF
OIL, GAS & MINING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED Lynn S. Rhea TITLE Consultant for Quintana Petroleum Corp. DATE June 16, 1988

(This space for Federal or State office use)

PERMIT NO. 43-037-31434 APPROVAL DATE

APPROVED BY /s/ Kenneth V. Rhea TITLE DISTRICT MANAGER DATE JUL 15 1988

CONDITIONS OF APPROVAL, IF ANY:

APPROVED FOR UNIT PURPOSES ONLY

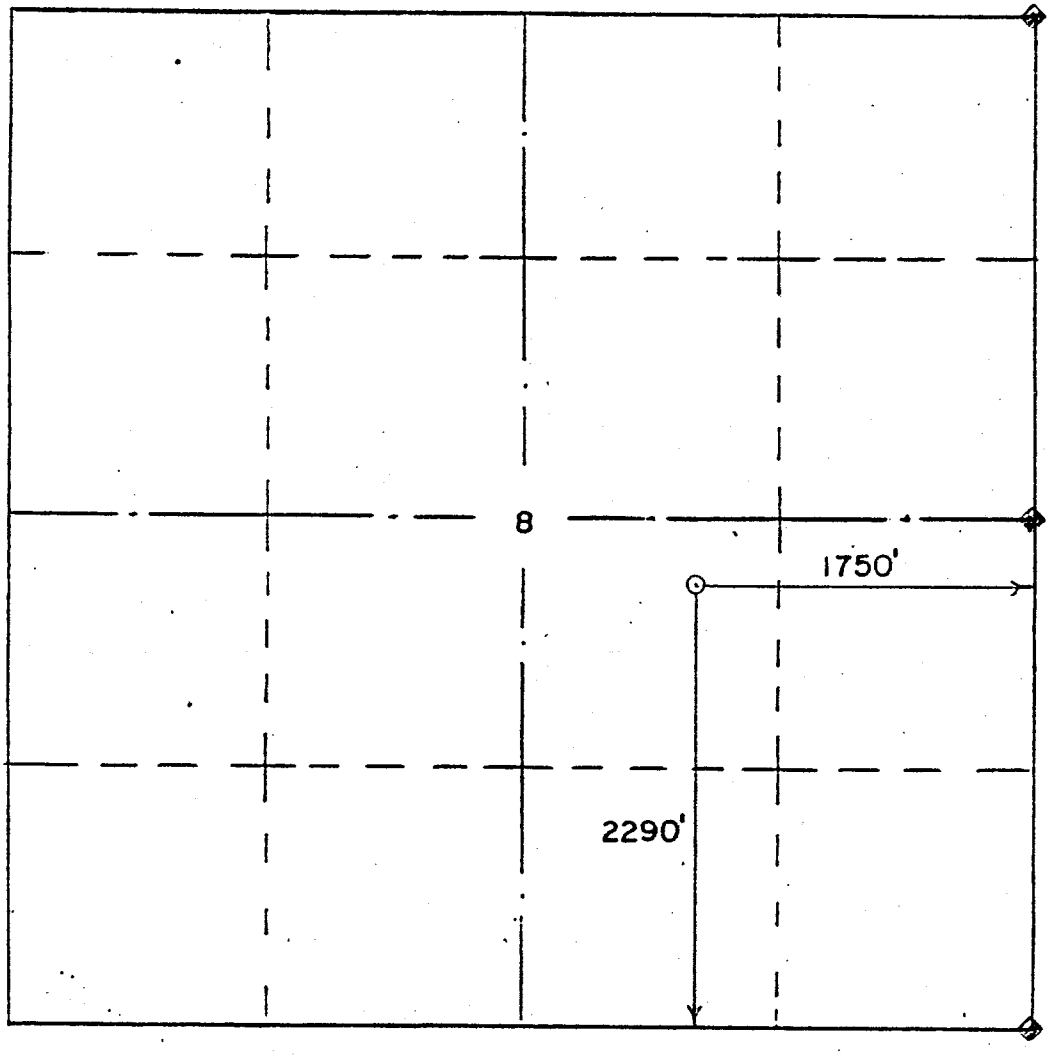
*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

DOGM

PLAT #1

WELL LOCATION AND ACREAGE DEDICATION PLAT



WELL LOCATION DESCRIPTION:
Quintana Petroleum
Caballo Federal #2-8
2290'FSL & 1750'FEL
Section 8, T.36 S., R.23 E., SLM
San Juan County, Utah
6378' ground elevation
Reference: SP 118, line 2B, Az. 134 40'35",
753' feet, 6388'grd.

The above plat is true and correct to my knowledge and belief.

12 June 1988

Gerald G. Huddleston, LS

213 East Montezuma Avenue • Cortez, Colorado 81321 • 303-565-3330

TEMPORARY

FILING FOR WATER IN THE STATE OF UTAH

RECEIVED JUN 29 1988 WATER RIGHTS SALT LAKE

RECEIVED JUN 27 1988 WATER RIGHTS PRICE

Rec. by
Fee Rec. 3600
Receipt # 24463
Microfilmed
Roll #

APPLICATION TO APPROPRIATE WATER

For the purpose of acquiring the right to use a portion of the unappropriated water of the State of Utah, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of Title 73, Chapter 3 of the Utah Code Annotated (1953, as amended).

CONFIDENTIAL

* WATER RIGHT NO. 09 — 1582 * APPLICATION NO. A T63333

1. *PRIORITY OF RIGHT: June 27, 1988 * FILING DATE: June 27, 1988

2. OWNER INFORMATION
Name(s): Quintana Petroleum Corp. c/o Permitco Inc. * Interest: ____ %
Address: P.O. Box 44065
City: Denver State: CO Zip Code: 80201-4065
Is the land owned by the applicant? Yes ____ No XX
(If "No", please explain in EXPLANATORY section.)

3. QUANTITY OF WATER: ____ cfs and/or 2.0 ac-ft

4. SOURCE: Recapture Reservoir * DRAINAGE: ____
which is tributary to ____
which is tributary to ____
POINT(S) OF DIVERSON: COUNTY: San Juan
S 1300' and E 400' of NW Corner of Sec. 18, T36S - R23E

Description of Diverting Works: 80 Bbl. Pump truck w/enclosed tank
* COMMON DESCRIPTION: 3 miles NE of Blanding Blanding Quad

5. POINT(S) OF REDIVERSION
The water will be rediverted from N/A at a point:

Description of Rediverting Works: ____

6. POINT(S) OF RETURN
The amount of water consumed will be ____ cfs or 2.0 ac-ft
The amount of water returned will be ____ cfs or ____ ac-ft
The water will be returned to the natural stream/source at a point(s): ____

7. STORAGE
Reservoir Name: N/A Storage Period: from ____ to ____
Capacity: ____ ac-ft. Inundated Area: ____ acres
Height of dam: ____ feet
Legal description of inundated area by 40 acre tract(s): ____

* These items are to be completed by the Division of Water Rights

TEMPORARY

Appropriate

8. List any other water rights which will supplement this application Not known

9. **NATURE AND PERIOD OF USE**

Irrigation:	From _____	to _____
Stockwatering:	From _____	to _____
Domestic:	From _____	to _____
Municipal:	From _____	to _____
Mining:	From _____	to _____
Power:	From _____	to _____
Other: Oil & Gas Drilling	From June 30, 1988	to June 30, 1989

10. **PURPOSE AND EXTENT OF USE**

Irrigation: _____ acres. Sole supply of _____ acres.
Stockwatering (number and kind): _____
Domestic: _____ Families and/or _____ Persons
Municipal (name): _____
Mining: _____ Mining District in the _____ Mine
Ores mined: _____
Power: Plant name: _____ Type: _____ Capacity: _____
Other (describe): Water will be used over the next year for an approximate period of 30 days.

11. **PLACE OF USE**

Legal description of place of use by 40 acre tract(s): Water will be used at the following drillsite.

Caballo Federal Unit #2-8, 2290' FSL and 1750' FEL, Sec. 8, T36S - R23E
N. 2290 ft. & W. 1750 ft. from SE Cor. Sec. 8, T36S, R23E, SLB&M (NE¼SE¼).
43-037-31434 - Drl.

12. **EXPLANATORY**

The following is set forth to define more clearly the full purpose of this application. (Use additional pages of same size if necessary): _____

Permission for the use of this water has been obtained from Norm Nielson, Chairman of the San Juan Water Conservancy District. A letter indicating Mr. Nielson's permission for the use of this water will be sent to your office directly from Mr. Nielson.

****

The applicant(s) hereby acknowledges that he/she/they are a citizen(s) of the United States of America or intends to become such a citizen(s). The quantity of water sought to be appropriated is limited to that which can be beneficially used for the purposes herein described. The undersigned hereby acknowledges that even though he/she/they may have been assisted in the preparation of the above-numbered application through the courtesy of the employees of the Division of Water Rights, all responsibility for the accuracy of the information contained herein, at the time of filing, rests with the applicant(s).

Lisa L. Green
Signature of Applicant(s)

Lisa L. Green - Permitco Inc. - Agent for:
QUINTANA PETROLEUM CORP.

RECEIVED

TEMPORARY

STATE ENGINEER'S ENDORSEMENT

WATER RIGHT NUMBER: 09 - 1582 APPLICATION NO. T63333

1. June 27, 1988 Application received by MP.

2. June 27, 1988 Application designated for APPROVAL by MP and KLJ.

3. Comments:

Conditions:
This application is hereby APPROVED, dated July 15, 1988, subject to prior rights and this application will expire on July 15, 1989.

Robert L. Morgan, P.E.
State Engineer

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

RECEIVED
JUL 27 1988
DIVISION OF OIL, GAS & MINING

ENTITY ACTION FORM - DOGM FORM 6

CONFIDENTIAL

OPERATOR Quintana Petroleum Corporation

ADDRESS 1050 - 17th Street, Suite 400
Denver, Colorado 80265

OPERATOR CODE N9485

PHONE NO. (303) 628-9211

OPERATORS MUST COMPLETE FORM UPON SPUDDING NEW WELL OR WHEN CHANGE IN OPERATIONS OR INTERESTS NECESSITATES CHANGE IN EXISTING ENTITY NUMBER ASSIGNMENT.

ACTION CODE	CURRENT ENTITY NO.	NEW ENTITY NO.	API NUMBER	WELL NAME	WELL LOCATION QQ	SC	TP	RG	COUNTY	SPUD DATE	EFFECTIVE DATE
B	99999	10889	43-037-31434	Caballo Unit Federal #2-8	NW SE	8	36S	23E	San Juan	7/23/88	

COMMENTS: Fee lease
Field - Wildcat
Unit - Caballo
Proposed zone - Akah
(2 other wells in Caballo Unit - Proposed Zones Akah, add to entity 10889 on 7-28-88)

COMMENTS:

COMMENTS:

COMMENTS:

COMMENTS:

ACTION CODES:
A - ESTABLISH NEW ENTITY FOR NEW WELL
B - ADD NEW WELL TO EXISTING ENTITY
C - RE-ASSIGN WELL FROM ONE EXISTING ENTITY TO ANOTHER EXISTING ENTITY
D - RE-ASSIGN WELL FROM ONE EXISTING ENTITY TO A NEW ENTITY
E - OTHER (EXPLAIN IN COMMENTS SECTION)

(SEE INSTRUCTIONS ON BACK OF FORM)

J M Williams
SIGNATURE

Production Technician 7/25/88
TITLE DATE

Form OGC-1b

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

RECEIVED
JUL 27 1988
DIVISION OF OIL, GAS & MINING

SUBMIT IN DUPLICATE* (Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: QUINTANA PETROLEUM CORPORATION (303)628-9211

3. ADDRESS OF OPERATOR: 1050 - 17th Street, Suite 400, Denver, Colorado 80265

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2290' FSL & 1750' FEL (NE NW SE)

5. LEASE DESIGNATION AND SERIAL NO.: N/A - Fee

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A

7. UNIT AGREEMENT NAME: Caballo Unit

8. FARM OR LEASE NAME: CABALLO UNIT FEDERAL

9. WELL NO.: #2-8

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Section 8, T36S-R23E

12. COUNTY OR PARISH: San Juan

13. STATE: Utah

14. PERMIT NO.: 43-037-31434

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 6378' GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]				
(Other) NOTICE OF SPUD			[X]	(Other)			

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

MICROFILM

Well spudded 1630 hrs. 7/23/88.
Contractor: Four Corners Drilling Rig #3.

CONFIDENTIAL

18. I hereby certify that the foregoing is true and correct

SIGNED J M Williams TITLE Production Technician DATE 7/25/88

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

cc: BLM - Moab

*See Instructions on Reverse Side

Form OGC-1b

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

RECEIVED
AUG 11 1988
DIVISION OF OIL, GAS & MINING

...PLICATE*
...ctions on
...rse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER DRY HOLE	5. LEASE DESIGNATION AND SERIAL NO.: N/A
	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A
	7. UNIT AGREEMENT NAME: Caballo Unit
2. NAME OF OPERATOR: QUINTANA PETROLEUM CORPORATION (303)628-9211	8. FARM OR LEASE NAME: CABALLO UNIT FEDERAL
3. ADDRESS OF OPERATOR: 1050 - 17th Street, Suite 400, Denver, Colorado 80265	9. WELL NO.: #2-8
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2290' FSL & 1750' FEL (NE NW SE)	10. FIELD AND POOL, OR WILDCAT: Wildcat
	11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Section 8, T36S-R23E
14. PERMIT NO.: 43-037-31434	15. ELEVATIONS (Show whether DF, RT, GR, etc.): 6378' GR
	12. COUNTY OR PARISH: San Juan
	13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	X
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other)	☐			(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Verbal plugging instructions received from John Baza, State of Utah, 8/7/88. Plugged well as follows:

Plug #1: 6528'-6328', 115 sxs Class "B"
Plug #2: 2425'-2225', 105 sxs Class "B"
Plug #3: 53'- 3', 30 sxs Class "B"

Above plugs witnessed and approved by W. S. Hutchinson, State of Utah. Per Mr. Hutchinson's instructions, backfilled cellar, mousehole and rathole and fenced 4th side of pit.

Well plugged and abandoned. Rig released 0130 hrs 8/8/88.

CONFIDENTIAL

18. I hereby certify that the foregoing is true and correct

SIGNED Jan Williams TITLE Production Technician DATE 8/9/88

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

CC: BLM - Moab

*See Instructions on Reverse Side

QUINTANA PETROLEUM CORPORATION
1050 SEVENTEENTH STREET
SUITE 400
DENVER, COLORADO 80265
(303) 628-9211

November 4, 1988

STATE OF UTAH
Division of Oil , Gas & Mining
3 Triad Center, Suite 350
355 West North Temple
Salt Lake City, Utah 84180-1204

RE: Caballo Unit Federal #2-8
Section 8, T36S-R23E
San Juan County, Utah

Gentlemen:

Enclosed for your records please find copies of the following information on the subject well:

1. Well Completion Report (Form OGCC-3)
2. DST #1
3. DST #2
4. Mud Logger's Report
5. Geologist's Report
6. Set of electric logs

Very truly yours,

Jeannie Williams
Production Technician

/jw
enclosures
cc: BLM - Moab

Form OGCC-3

10

STATE OF UTAH

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

OIL & GAS CONSERVATION COMMISSION

RECEIVED
NOV 07 1988
DIVISION OF OIL, GAS & MINING

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☒ Other

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: QUINTANA PETROLEUM CORPORATION (303) 628-9211

3. ADDRESS OF OPERATOR: 1050 - 17th Street, Suite 400, Denver, Colorado 80265

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 2290' FSL & 1750' FEL (NE NW SE)
At top prod. interval reported below: ---
At total depth: Same

CONFIDENTIAL

5. LEASE DESIGNATION AND SERIAL NO.: N/A
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A
7. UNIT AGREEMENT NAME: Caballo Unit
8. FARM OR LEASE NAME: CABALLO UNIT FEDERAL
9. WELL NO.: #2-8
10. FIELD AND POOL, OR WILDCAT: Wildcat
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Section 8, T36S-R23E

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
43-037-31434	6/28/88	San Juan	Colorado

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
7/23/88	8/5/88	P&A 8/8/88	6378' GR	6378'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
6857'	----		→	0'-6857'	N/A

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: N/A

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: DIL/GR/SP; LDT/CNL/GR; BHC-Sonic

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9 5/8"	36#	2328.16'	12 1/4"	577 sxs Lite, 200 sxs "B" Top out w/85 sxs "B"	None

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
N/A				

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
N/A		

31. PERFORATION RECORD (*Interval, size and number*): N/A

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
N/A	

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
DRY HOLE		

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED J M Williams TITLE Production Technician DATE 11/4/88

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.
If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.
Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.
Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.
Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.
Item 29: *"Sacks Cement"*: Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.
Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
DST #1: 6588'-6618' (Upper Ismay)			
Times: 30/60/60/120			
IFP opened w/ 1" blow and incr to 6" in 30 min.			
FFP opened w/ 1" blow and incr to 3" in 30 min & was stable. No GTS.			
IHP 3153			
IHP 87-108			DP Recovery: 240' WCM, no tr oil or gas.
ISIP 1726			Sampler: capacity 2100 cc: rec. 600 cc mud, 1500 cc
FHP 3135			SW, 400 psi.
FFP 130-162			
FSIP 2092			
DST #2: 6796'-6828' (Desert Ck)			
Times: 30/60/60/120			
IHP 3301			
IFP 52-56			DP Recovery: 40' SGCM; Rw 9000 ppm.
ISIP 87			Sampler: Capacity 2100 cc: rec. 2100 cc GCM, 50 psi.
FHP 3283			
FFP 56-60			
FSIP 87			

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
Chinle	2257'	
Hermosa	5140'	
Upper Ismay	6495'	
Hovenweep Sh.	6629'	
Lower Ismay	6670'	
Gothic Shale	6725'	
Desert Ck.	6756'	
Chimney Rock Sh	6817'	
Akah	6840'	

OIL AND GAS
RJF GLH SLS
DRN JRB DTS
1-TAS
2- MICROFILM
3- FILE

CABALLO #2-8

QUINTANA PETROLEUM CORPORATION
SEC 8, T36S, R23E
SAN JUAN COUNTY, UTAH

TABLE OF CONTENTS

CABALLO #2-8
Sec 8, T36S, R23E
SAN JUAN COUNTY, UTAH

WELL DATA SUMMARY

WELL NAME:	CABALLO UNIT FEDERAL #2-8
OPERATOR:	QUINTANA PETROLEUM CORPORATION
LOCATION:	2290 FSL and 1750' FEL Sec. 8, T36S, R23E
COUNTY:	SAN JUAN
STATE:	UTAH
AREA:	CABALLO
DRILLING CONTRACTOR:	FOUR CORNERS DRILLING RIG #3
DRILLING FOREMAN:	DUTCH DUCKETT
WELL SITE GEOLOGY:	DOUG REDMOND
ELEVATION:	KB 6401' GL 6388'
DEPTH LOGGED:	5100' to 6857'
DATE LOGGED:	7/30/88 to 8/06/88
TOTAL DEPTH:	6857' DRILLERS, 6850' LOGGERS
HOLE SIZE:	12 1/4" to 2327', 8 3/4" to 6857'
D.S.T.:	BAKER LYNES
MUDLOGGING COMPANY:	INTERMOUNTAIN GEO-TECH.
MECHANICAL LOGS:	WELEX
WELL STATUS:	AWAITING DECISION 8/06/88, DECISION TO PLUG WELL MADE ON 6/07/88

DAILY DRILLING SUMMARY

1988 DATE	DEPTH	PROGRESS	HOURS DRILLING	MUD WEIGHT	VISC.	W.L.	PH	ACTIVITY
7/30								
7/31	5459'	576'	16 1/2	Drilling with H_2O				Drilling
8/01	6179'	720'	23 1/4	Drilling with H_2O				Drilling
8/02	6535'	356'	18 1/4	8.9	36	15.2	9.5	Drilling
8/03	6618'	73'	3 1/2	8.9	44	9.6	9.5	D.S.T. #1
8/04	6800'	182'	9 3/4	9.0	38	9.8	9.5	Drilling
8/05	6828'	28'	1/2	9.1	50	9.6	9.5	D.S.T. #2
8/06	6857'	29'	1 3/4	9.1	44	9.6	9.5	E-logs

FORMATION TOPS

Elevation: KB 6401'
GL 6388'

FORMATION	PROGNOSIS	SAMPLE TOP	E-LOG	SUBSEA
CHINLE	2243'	2257'		
HERMOSA	5124'	5140'	5136'	+ 1265'
UPPER ISMAY	6454'	6495'	6443'	- 42'
HOVENWEEP SHALE	6590'	6629'	6610'	- 209'
LOWER ISMAY	6628'	6670'	6644'	- 243'
GOTHIC SHALE	6680'	6725'	6691'	- 290'
DESERT CREEK	6711'	6756'	6724'	- 323'
CHIMNEY ROCK SHALE	6788'	6817'	6804'	- 403'
AKAH	6811'	6840'	6814'	- 413'

DEVIATION SURVEY

DEPTH	SURVEY
5105'	2 1/4°
5385'	2°
5858'	1 3/4°
6857'	1 1/2°

SHOW REPORT

WELL NAME: CABALLO #2-8

AREA: CABALLO COUNTY: SAN JUAN STATE: UTAH

SHOW No.: 1

FOOTAGE - from 6589' to 6594' Net ftg 5'

	DT	TOTAL GAS	CHROMATOGRAPH BREAKDOWN C_1	C_2	C_3	C_{4I}	C_{4N}	other
BEFORE	3	20	0.15	TR	TR			
DURING	1.5	106	0.46	0.27	0.14	TR		
AFTER		24	0.07	TR	TR			

LITHOLOGY TYPE & DESCRIPTION: LS - dark brown, tan, light gray, cryptocrystalline, very finely microcrystalline, recrystallized, sucrosic

POROSITY Est.: 5%

STAIN DESCRIPTION: Trace patchy, pin point, dark staining

FLUORESCENCE and CUT DESCRIPTION: light blue fluorescence in 5%, very slow light yellow cut(residual)

REMARKS: Tight limestone, at 6556 to 6558 feet gas increased to 375u maximum from 20, C_1, C_2, trace C_3, limestone no sample shows.

SHOW REPORT

WELL NAME: CABALLO #2-8

AREA: CABALLO COUNTY: SAN JUAN STATE: UTAH

SHOW No.: 2

FOOTAGE - from 6601' to 6611' Net ftg 10'

			CHROMATOGRAPH BREAKDOWN					
	DT	TOTAL GAS	C_1	C_2	C_3	C_{4I}	C_{4N}	other
BEFORE	3.5	5	TR					
DURING	45-1	365	1.5	0.9	0.6	TR		
AFTER		15	0.07					

LITHOLOGY TYPE & DESCRIPTION: LS - brown, light gray,tan,cryptocrystalline, very finely microcrystalline,fossiliferous in part,sucrosic,very friable + dolomitic

POROSITY Est.: None visible

STAIN DESCRIPTION: Trace patchy, dark stain

FLUORESCENCE and CUT DESCRIPTION: light blue-yellow fluorescence in 50%, slow streaming milky white cut

REMARKS: No increase of Cl-, heavy gases increased towards the end of the show, possibly oil in samples clear jellylike polymer is fluorescing with probable oil.

SHOW REPORT

WELL NAME: CABALLO #2-8

AREA: CABALLO COUNTY: SAN JUAN STATE: UTAH

SHOW No.: 3

FOOTAGE - from 6798' to 6811' Net ftg 13'

			CHROMATOGRAPH BREAKDOWN					
	DT	TOTAL GAS	C_1	C_2	C_3	C_{4I}	C_{4N}	other
BEFORE	3.5	200	0.65	0.34	0.21			
DURING	2-1	410	1.5	1.1	0.43	0.1		
AFTER		270	1.03	0.5	0.14	TR		

LITHOLOGY TYPE & DESCRIPTION: Dolomite - medium brown,medium gray,crypto-crystalline,very finely microcrystalline,sucrosic,earthy ip,argillaceous ip

POROSITY Est.: None visible

STAIN DESCRIPTION: pin point staining

FLUORESCENCE and CUT DESCRIPTION: None visible

REMARKS: Tight first 7 feet, fast 6' at base - 1 min/foot.

DRILL STEM TEST REPORT

WELL NAME: CABALLO #2-8 DATE: 8/03/88

AREA: CABALLO COUNTY: SAN JUAN STATE: UTAH

WITNESS: REDMOND, DUCKETT

TEST NUMBER: 1 INTERVAL TESTED: 6588-6618'

TEST COMPANY AND TYPE OF TEST: BAKER LYNES, Conventional Double Packer

INITIAL FLOW: Opened with 1" blow, 3" at 2 min., 5" in 5 min., 6" at 10 min., 7" at 20 min., 6" at 30 min., shut in tool, NGTS

FINAL FLOW: Opened with 1" blow, 2" at 15 min., 3" at 30 min., remained, tool shut in, NGTS.

	TIME	TOP CHART	BOTTOM CHART
IH:		3204	3153
IF:	30	81-108	87-108
ISI:	60	1691	1726
FF:	60	135-162	130-162
FSI:	120	2072	2092
FH:		3104	3135

BHT: 135 °

RECOVERY: 60' drilling mud, 180' muddy H_2O

SAMPLE CHAMBER: 0 cfg and 1500 cc H_2O + 600 cc drilling mud at 400 PSI

RESISTIVITIES: Recovered H_2O 0.1 at 65° , 44,000 Cl-

REMARKS: Good mechanical test

DRILL STEM TEST REPORT

WELL NAME: CABALLO #2-8 DATE: 8/05/88

AREA: CABALLO COUNTY: SAN JUAN STATE: UTAH

WITNESS: REDMOND, DUCKETT

TEST NUMBER: 2 INTERVAL TESTED: 6795-6827'

TEST COMPANY AND TYPE OF TEST: BAKER LYNES, Conventional Double Packer

INITIAL FLOW: Opened with 1" blow, 3" at 7 min., 6" at 5 min., decreased to 4" at 30 min., NGTS

FINAL FLOW: Opened with 1" blow, 2" at 5 min., slowly decreased to 1/2" at end of final flow

	TIME	TOP CHART	BOTTOM CHART
IH:		3301	3329
IF:	30	52-56	65-70
ISI:	60	87	87
FF:	60	56-60	70-76
FSI:	120	87	87
FH:		3283	3304

BHT: 137 °

RECOVERY: 40' slightly gas cut mud

SAMPLE CHAMBER: NA cfg and 2,100 cc slightly gas cut mud at 50 PSI

RESISTIVITIES: sample chamber 0.45 at 65° , 9,000 Cl-

REMARKS: Good mechanical test

GEOLOGIC SUMMARY

This well was spudded in on Saturday, July 23,1988, and was drilled to 6857' - through the Pennsylvanian Ismay and Desert Creek zones, both of which are potentially productive. For evaluation, a two man mud-logging unit was employed, and all shows were drill stem tested. Mechanical logs included a resistivity log, acoustic and neutron-density porosity logs.

The well was drilled without any major problems, and total depth was reached in the top of the Paradox Salt.

HERMOSA: 5136' - 6443'

This zone included: the Honaker Trail, an interval of red to brown-gray silts and shales interbedded with gray limestone, and occasional sandstone stringers; the Lower Paradox comprised of massive marine carbonates and mudstones; and the Paradox Shale, a dark gray to black shale.

The mud gas recorded through the Hermosa came primarily from dark colored, organic shales. Occasional sand stringers gave up mud gas, although no sample show, and not enough to validate a test interval.

UPPER ISMAY: 6443' - 6610'

This interval was mearly 70' thicker than the nearest offset sell, the Caballo #1-9. It was divided into three major intervals: a dirty, shaly mudstone on top; a massive anhydrite and anhydritic carbonate in the middle; and underlying was a carbonate interval at the base. The anhydrite interval from 6496' to 6544' was streaked with dolomitic limestone through the upper portion, and only the lower 15' was massive anhydrite. The limestone interval from 6544' to 6560' was argillaceous and earthy, becoming cleaner and more algal-mound appearing from 6559' to 6610'. Two shows were recorded in this interval at log depths of 6578' to 6586' and 6590' to 6605'. The limestone was sandy and porous, with definite algal blade material included at thin intervals. Free oil was noticed in the samples, however, drill stem testing recovered only salt water from the two zones. E-logs bear this out, with resistivities ranging to 0.5 ohms, indicating water.

HOVENWEEP SHALE: 6610' - 6644'

This shale was typical; black, calcareous, carbonaceous, silty, and fissile. Occasional thin carbonate streaks appeared in the samples, to the Lower Ismay.

LOWER ISMAY: 6644' - 6691'

The Lower Ismay zones were comprised of: A dense medium gray, argillaceous limestone on top; a massive anhydrite with some carbonate streaks in the middle; and another dense gray limestone interval made up its base. No shows were recorded.

GOTHIC SHALE: 6691' - 6724'

This shale was black, carbonaceous, and fissile. Thin intervals of medium to dark gray mudstone were present here.

DESERT CREEK: 6724' - 6804'

A dense medium gray dolomitic silt, and an anhydrite dolomite marked this top. The dolomite was followed by massive anhydrite, an interval of mudstone, dolomitic, and a thinner second anhydrite from 6770' to 6774' overlying the carbonate interval of reworked algal mound material. This well had slightly expanded and contained a sandy, clastic, carbonate from 6795' to 6804'. This zone produced a show which was drill stem tested, showing a tight gas zone unable to economically produce hydrocarbons.

CHIMNEY ROCK SHALE: 6804' - 6814'

The Chimney Rock Shale was black, carbonaceous, silty, fissile, and gassy.

AKAH: 6814' - 6849'

This is the last zone above to Paradox Salt. The top was picked on an anhydrite, followed by dense light to medium gray limestone. No shows were recorded, and the top of the salt was tagged for a total depth of the well.

SAMPLE DESCRIPTIONS

5100-5130	50%	Sandstone - white, clear, light gray, very fine grain, calcareous, angular, unconsolidated, NFSOC
	30%	Limestone - light to medium gray, sandy, firm
	20%	Shale - medium brown to gray, calcareous, silty, micaceous, firm
5130-5160	70%	Limestone - light to medium gray, cryptocrystalline, very sandy, dense, medium hard
	30%	Shale - as above
5160-5220		Very Poor Sample
	50%	Limestone - as above
	50%	Shale - as above, graded to siltstone
5220-5250	80%	Limestone - white, light to medium gray, cryptocrystalline, very finely microcrystalline, sandy in part, slightly dolomitic, siliceous in part, dense, medium hard
	20%	Shale - as above
5250-5280	80%	Limestone - as above
	20%	Sandstone - clear, white, very fine to fine grain, calcareous, Angular to subangular, unconsolidated, NFSOC
5280-5340	70%	Limestone - medium gray to brown, cryptocrystalline, marly, medium hard
	30%	Shale - medium gray, medium brown, calcareous, marly, silty, firm, blocky
5340-5400	90%	Limestone - light to medium gray, tan, translucent, crypto-crystalline, slightly dolomitic, dense, medium hard
	10%	Shale - as above
		Trace Sandstone - 5%
5400-5430	70%	Limestone - as above
	30%	Sandstone - clear, orange, light gray, very fine grain, arkosic, slightly calcareous, unconsolidated
5340-5360	90%	Limestone - white, light gray, cryptocrystalline, dense, medium hard
	10%	Shale - dark gray, marly, firm
5460-5580	70%	Shale - as above
	30%	Limestone - as above
		Trace Sandstone
5580-5610	80%	Limestone - white, light gray, tan, cryptocrystalline, slightly dolomitic, medium hard
	20%	Sandstone - clear, light gray, very fine grain, unconsolidated
		Trace Shale
5610-5640	60%	Shale - medium gray, kard gray, marly, argillaceous, firm
	40%	Limestone - as above
5640-5670	100%	Cavings (shale)

5670-5700	50%	Limestone - as above, argillaceous in part
	50%	Shale - as above
5700-5730	90%	Limestone - light gray, white, tan, cryptocrystalline, very finely microcrystalline, dolomitic, slightly argillaceous in part, dense, medium hard
	10%	Shale - medium gray, marly
5730-5850		Very Poor Sample
	60%	Limestone - as above
	40%	Shale - as above
5850-5880	70%	Shale - medium to dark gray, marly, argillaceous, firm
	30%	Limestone - as above
5880-5910	90%	Limestone - light gray, tan, cryptocrystalline, very finely microcrystalline, dolomitic in part, slightly argillaceous in part, firm, medium hard
	10%	Shale - as above
5910-5970	80%	Shale - dark gray, calcareous, silty, firm
	20%	Limestone - as above
5970-6030	60%	Shale - as above, medium gray, very marly
	40%	Limestone - as above
6030-6060	90%	Limestone - tan, light gray, translucent, cryptocrystalline, very finely microcrystalline, slightly siliceous in part, dolomitic in part, medium hard, hard
	10%	Shale - as above
6060-6120	80%	Shale - dark gray, calcareous, silty, firm
	20%	Limestone - as above
6120-6150	90%	Limestone - tan, cryptocrystalline, dolomitic, medium hard, hard
	10%	Shale - as above
6150-6180	70%	Shale - as above, medium gray, argillaceous, marly, interbedded with limestone
	30%	Limestone - as above
6180-6240	80%	Shale - as above
	20%	Limestone - as above, argillaceous
6240-6270	50%	Shale - as above
	50%	Limestone - white, light gray, cryptocrystalline, very finely microcrystalline, dense, medium hard
6270-6300	100%	Cavings
6300-6340	90%	Limestone - white, light gray, tan, cryptocrystalline, chalky, medium hard
	10%	Shale - as above
6340-6360	100%	Cavings

6360-6410		Very Poor Sample
	80%	Limestone - as above, medium brown, very finely micro-crystalline, dolomitic, frim
	20%	Shale - medium gray, argillaceous, firm
6410-6440	100%	Cavings
6440-6470		Very Poor Sample
	90%	Shale - dark gray to black, calcareous, silty, medium hard, firm
	10%	Limestone - as above
6470-6500		Very Poor Sample
	70%	Shale - as above, some medium brown, argillaceous, firm
	30%	Limestone - medium brown, medium gray, cryptocrystalline, very finely microcrystalline, argillaceous, firm Trace Anhydrite
6500-6540	70%	Limestone - medium brown, medium gray, argillaceous in part, slightly dolomitic, very anhydritic, contains anhydrite nodules, medium hard
	30%	Anhydrite - white, soft
6540-6555	80%	Anhydrite - white, soft
	20%	Limestone - as above
6555-6580	90%	Limestone - medium brown, tan, cryptocrystalline, occasionally very finely microcrystalline, earthy, slightly dolomitic, argillaceous, dense, medium hard
	10%	Shale - dark gray, firm
6580-6590	100%	Limestone - medium brown, light gray, cryptocrystalline, slightly anhydritic, dense, medium hard
6590-6600	90%	Limestone - white, light gray, tan, cryptocrystalline, very finely microcrystalline, slightly dolomitic, anhydritic, firm, no visible Ø, trace dark stain, trace bright blue fluorescence, slow yellow residual cut
	10%	Shale - as above
6600-6620	90%	Limestone - white, light gray, tan, cryptocrystalline, very finely microcrystalline, trace chalky, very fossiliferous with algal blades visible, very dolomitic and sucrosic in part, friable, no visible Ø, trace dark staining, 50% bright blue fluorescence, sample had free oil droplets, milky yellow-white cut
	10%	Shale - as above
6620-6630	50%	Limestone - as above
	50%	Shale - dark gray to black, calcareous, silty, firm
6630-6650	90%	Shale - as above
	10%	Limestone - as above
6650-6670	100%	Shale - black, calcareous, silty, carbonaceous, firm

6670-6680	60%	Shale - as above
	40%	Limestone - medium gray, brown, very finely microcrystalline, cryptocrystalline, slightly argillaceous, medium hard
6680-6690	90%	Limestone - as above, anhydiritc, dense
	10%	Shale - as above
		Trace Chert - tan, translucent
		Trace Anhydrite
6690-6700	80%	Limestone - tan, medium gray, cryptocrystalline, occasionally very finely microcrystalline, very anhydritic, dense, firm, medium hard
	10%	Anhydrite - white, soft
	10%	Shale - as above
6700-6720	70%	Limestone - as above, becoming brown, earthy, argillaceous, dense
	30%	Shale - medium brown, dark gray, black, calcareous, silty, firm
6720-6740	50%	Shale - dark brown, dark gray, calcareous, silty, fissile, firm
	50%	Limestone - as above
6740-6750	80%	Limestone - medium gray to brown, cryptocrystalline, occasionally very finely microcrystalline, argillaceous, earthy, dolomitic, firm, medium hard
	20%	Shale - as above
6750-6760		Very Poor Sample
	60%	Limestone - as above, argillaceous, some anhydritic
	40%	Shale - as above
6760-6770		Very Poor Sample
	60%	Limestone - as above, medium brown, dolomitic, anhydritic
	30%	Shale - as above
	10%	Anhydrite - white, soft, calcareous
6770-6780	70%	Limestone - medium gray to brown, cryptocrystalline, very finely microcrystalline, argillaceous, dolomitic, medium hard
	30%	Shale - as above
6780-6800	70%	Limestone - as above, occasionally slightly anhydritic
	30%	Shale - as above
		Trace Anhydrite
6800-6810	70%	Dolomite - medium gray to brown, very fine to finely microcrystalline, very sucrosic, friable, tight, trace medium brown stain, no fluorescence or cut, no visible Ø
	30%	Shale - as above
6810-6820	70%	Dolomite - as above, becoming more dense, argillaceous, some dark gray, marly, dense, medium hard
	30%	Shale - as above
6820-6840	100%	Shale - black, calcareous, carbonaceous, silty, firm, fissile

6840-6854	60%	Shale - as above
	40%	Limestone - medium gray to brown, tan, cryptocrystalline, dense, medium hard
6854-6856		Salt (Mud Chlorides rose)

IGT

QUINTANA PETROLEUM CORPORATION
CABALLO UNIT FEDERAL #2-8
SECTION 8, T36S-R23E
SAN JUAN COUNTY, UTAH

INTERMOUNTAIN GEO-TECH, INC.
758 1630 Road
DELTA, CO 81416
303-874-7762

QUINTANA PETROLEUM CORPORATION
CABALLO UNIT FEDERAL #2-8
SECTION 8, T36S-R23E
SAN JUAN COUNTY, UTAH

TABLE OF CONTENTS

(1) COPY FINAL MUDLOG (FULLSIZE)
(1) COPY FINAL MUDLOG (HALFSIZE)

DRILLING CONTRACTOR:	4 CORNERS DRILLING FARMINGTON, NEW MEXICO
DRILLING FOREMAN:	MR. DUTCH DUCKETT
PUSHER:	MR. JIM CAMPBELL
GEO TECHNOLOGISTS:	MR. DALE LOCKHART - MR. KEN BLASS INTERMOUNTAIN GEO-TECH, INC. 758 1630 ROAD DELTA, CO 81416
DRILLING FLUID:	MR. LYNN DRANDHAGAN MILPARK DRILLING FLUIDS FARMINGTON, NEW MEXICO
DRILL STEM TEST:	MR. DAVID DOLYNIUK LYNES FARMINGTON, NEW MEXICO
WIRE LINE LOGS:	WELLEX VERNAL, UT
WELLSITE GEOLOGIST:	MR. DOUG REDMAN

QUINTANA PETROLEUM CORPORATION
CABALLO UNIT FEDERAL #2-8
SECTION 8, T36S-R23E
SAN JUAN COUNTY, UTAH

SUMMARY OF DAILY ACTIVITY

DATE	ACTIVITY	MIDNITE DEPTH	24 HOUR FOOTAGE
7/29/88	IGT UNIT #1 ON LOCATION, RIGGING UP	--	--
7/30/88	DRLG, SURVEY, DRLG	--	--
7/31/88	DRLG, SURVEY, DRLG	5426'	554'
8/01/88	DRLG, SURVEY, DRLG	5980'	461'
8/02/88	SURVEY, DRLG	6441'	178'
8/03/88	DST #1, TOH NB #7	6619'	61'
8/04/88	DRLG, SURVEY, DRLG	6680'	146'
8/05/88	DST #2	6826'	29'
8/06/88	IGT UNIT #1 RELEASED	6855'	--

QUINTANA PETROLEUM CORPORATION
CABALLO UNIT FEDERAL #2-8
SECTION 8, T36S-R23E
SAN JUAN COUNTY, UTAH

BIT RECORD

BIT #	SIZE	MAKE	TYPE	DEPTH OUT	FEET	HOURS
1	12¼"	STC	F-2	45'	45'	5
2	17½"	SMITH	SJ5	45'	--	5
3	12¼"	STC	F-3	1594'	1551'	22
4	12¼"	HTC	J-22	2344'	750'	11¾
5	8¾"	STC	F-27	5425'	3081'	75¼
6	8¾"	STC	F-3	6618'	1193'	46
7	8¾"	STC	F-3	6855'	237'	

WELL NAME CABALLO UNIT FEDERAL #2-8 COUNTY SAN JUAN STATE UTAH

DEPTH	DEVIATION	DEPTH	DEVIATION	DEPTH	DEVIATION	DEPTH	DEVIATION
109'	¼°						
343'	½°						
1059'	¾°						
1571'	1¾°						
2304	1¾°						
2630'	1°						
3131'	1¾°						
3839'	1¾°						
4343'	2½°						
4594'	2½°						
4855'	2°						
5385'	2°						
5858'	1¾°						
6355'	1½°						
6604'	1¾°						
6828'	1°						

INTERMOUNTAIN GEO-TECH, INC.
758 1630 Road DELTA, CO 81416
303-874-7762

DEVIATION SURVEYS

I.G.T.
INTERMOUNTAIN GEO-TECH, INCORPORATED
758 1630 Road
Delta, Colorado 81416

(303) 874-7762

Nick Larkin-President

DST # 1 6599' to 6619' Date 8/03/88

FORMATION LOWER UPPER ISMAY

1st Open Open w/1" blow, 3" @ 2 min, 5" @ 5 min, 6" @ 10 min, 7" @ 20 min, 6" @ 30 min NGTS

2nd Open Open w/1" blow, 2" @ 5 min, 3" @ 30 min, stand constant, NGTS

	MINUTES	TOP	MIDDLE	BOTTOM
IHP		3204	3153	
IF	30	81	87	
FF	60	108	108	
ISI	60	1691	1726	
2F				
2FF				
2SI	120	2072	2092	
FHP		3104	3135	

Pipe Recovery

Sample Recovery 2100 cc - 1500 cc saltwater, 600 cc mud

Mud Resitivites

Mud= ____ at ____ °F
Top= ____ at ____ °F
Middle= ____ at ____ °F
Bottom= ____ at ____ °F
Sampler= ____ at ____ °F

BHT 135 °F

Remarks

GEO-TECHNOLGISTS Dale Lockhart

I.G.T.
INTERMOUNTAIN GEO-TECH, INCORPORATED
758 1630 Road
Delta, Colorado 81416

(303) 874-7762

Nick Larkin-President

DST # 2 6798' to 6818' Date 8/04/88

FORMATION DESERT CREEK

1st Open Open w/1" blow, 3" @ 2 min, 6" @ 5 min reduced to 4" @ shut in NGTS

2nd Open Oper w/ 1" blow, 2" @ 5 min, reduced to ½" at shut in NGTS

	MINUTES	TOP	MIDDLE	BOTTOM
IHP		3301	3329	
IF	30	52	65	
FF	60	56	70	
ISI	60	87	87	
2F				
2FF				
2SI	120	87	87	
FHP		3283	3304	

Pipe Recovery

Sample Recovery 2100 cc slightly gas cut mud

Mud Resitivites

Mud= ____ at ____ °F
Top= ____ at ____ °F
Middle= ____ at ____ °F
Bottom= ____ at ____ °F
Sampler= ____ at ____ °F

BHT 137 °F

Remarks

GEO-TECHNOLGISTS Dale Lockhart

DATE	DEPTH	WEIGHT	MUD GRADIENT	FUNNEL VIS	PLASTIC VIS	YIELD POINT	GEL STRENGTH	PH	FILTRATE API	CAKE	ALKALINITY FILTRATE	CHLORIDE PPM	CALCIUM PPM	SAND % CONTENT	SOLIDS % CONTENT	OIL % CONTENT	WATER % CONTENT	% KCL
7/26	845	8.7		29	2	1		9			:4/6	500	160	½	2.8		97.2	
7/27	2261	8.5		27				10			:4/7	500	60	¼	1.3		98.7	
7/28	2905	8.6+		27				12			1:0/1:2	700	40	¾	2.4		97.6	
7/29	3742	8.5+		27				9.0			:4/5	600	40	¼	1.7		98.3	
7/30	4860	8.3		26				10			:2/3	600	240				100	
7/31	5425	8.3		26				8.5			:1/2	600	180				100	
8/1	6163	8.4		26				10			:3/4	500	120				99	
8/2	6495	8.8+		35	7	4	¼	10.5	10.0	2	1.55/1.1	600	20	½	3.9		96.1	
8/2	6538	8.9		36	7	6	5/13	9.5	15.2	2	:2/3	600	280	½	4.3		95.7	
8/2	6618	9.0		44	12	10	5/	9.5	9.6	2	:2/7	900	60	¼	5		95	
8/3	6665	8.9		40	11	5	3/14	8.5	9.4	2	:1/4	750	120	¼	4.8		95/2	
8/3	6673	9.0		38	10	7	4/16	9.5	9.8	2	:1/3	700	90	¼	5		95	
8/4	6828	9.1		50	10	10	4/20	9.5	9.6	2	:2/5	700	120	¼	5.7		94.3	

INTERMOUNTAIN GEO-TECH, INC.
758 1630 Road DELTA, CO 81416
303-874-7762

MUD RECORD

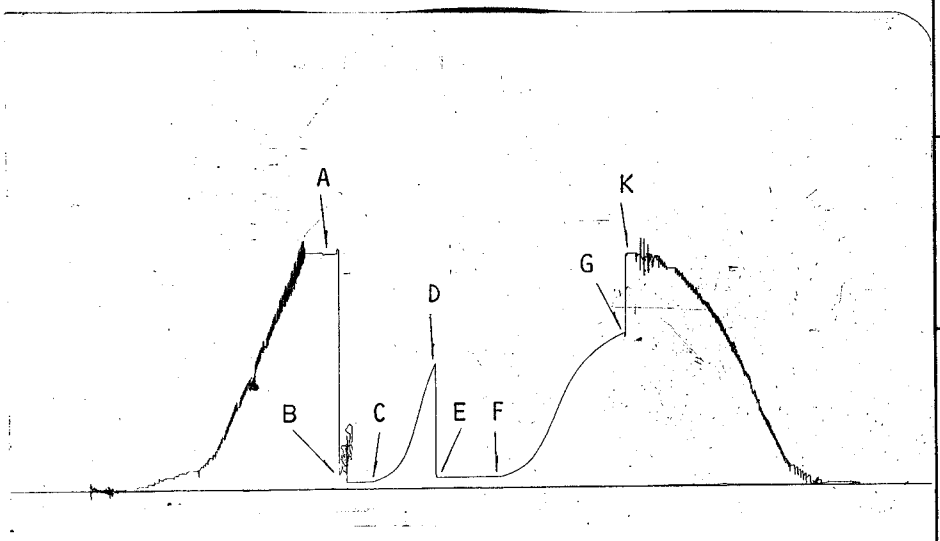
Phone (303) 573-8027

BAKER SERVICE TOOLS

1616 Glenarm — Suite 1350
Denver, CO 80202

Operator: QUINTANA PETROLEUM CORP.
Ticket No.: 80700
Date: 8/3/88
Well Name & No.: "TIGHT HOLE"
Location: CABALLO UNIT FEDERAL #2-8
County, State: S-8 T-36 S R-23E SAN JUAN COUNTY, UT
DST No.: 1
Interval: 6588'- 6618'
Formation: ISMAY

Contractor	Four Corners Drlg.	Surface Choke	1/4"	Mud Type	--
Rig No.	4	Bottom Choke	3/4"	Weight	9.0
Spot	--	Hole Size	8 3/4"	Viscosity	44
Sec.	8	Core Hole Size	--	Water Loss	--
Twp.	36 S	DP Size & Wt.	4 1/2" 16.60	Filter Cake	--
Rng.	23 E	Wt. Pipe	None	Resistivity	2.0 @ 65 °F
Field	--	I.D. of DC	2 1/4"		3,000 Ppm. NaCl
County	San Juan	Length of DC	520'	B.H.T.	135 °F
State	Utah	Total Depth	6618'	Co. Rep.	Dutch Duckett
Elevation	6401' KB	Type Test	Conventional	Tester	David Dolyniuk
Formation	Ismay	Interval	6588'- 6618'	Baker Dist.	Farmington, NM



		REPORTED	CORRECTED
Opened Tool	@	08:38	hrs.
Flow No.	1	30	25 min.
Shut-In No.	1	60	60 min.
Flow No.	2	60	60 min.
Shut-In No.	2	120	118 min.
Flow No.	3	None Taken	min.
Shut-In No.	3	"	" min.

Recorder Type: Kuster K-3
No.: 16815 Cap.: 6100 psi
Depth: 6610 feet
Inside
Outside X
Clock
Range: 12 hrs.

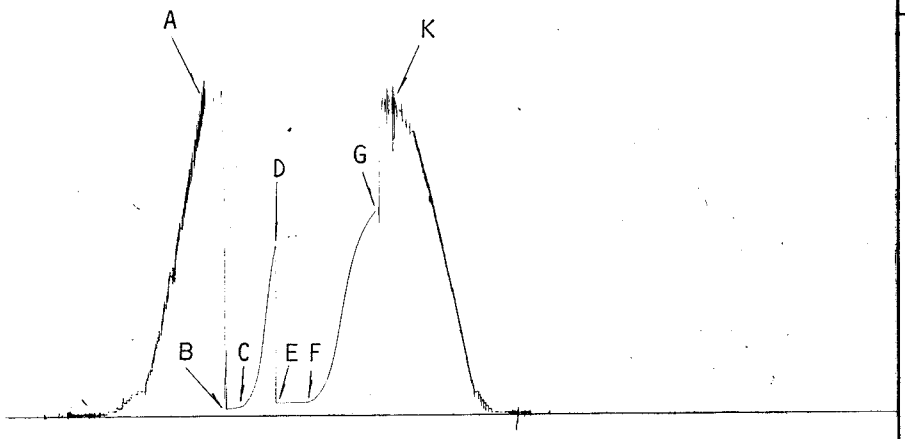
Initial Hydrostatic	A	3146.9
Final Hydrostatic	K	3111.4
Initial Flow	B	95.4
Final Initial Flow	C	103.1
Initial Shut-In	D	1700.8
Second Initial Flow	E	150.1
Second Final Flow	F	159.6
Second Shut-In	G	2077.0
Third Initial Flow	H	
Third Final Flow	I	
Third Shut-In	J	

Pipe Recovery: 240' Total fluid = 1.18 bbl., consisting of:
60' Mud = 0.29 bbl.
180' Muddy water = 0.88 bbl.

Resistivity:
Top: .45 @ 65°F - .23 @ Res Temp = 14,678 ppm NaCl., 8,923 ppm Cl.
Middle: .25 @ 65°F - .13 @ Res Temp = 27,914 ppm NaCl., 16,969 ppm Cl.
Bottom: .20 @ 65°F - .10 @ Res Temp = 35,818 ppm NaCl., 21,774 ppm Cl.

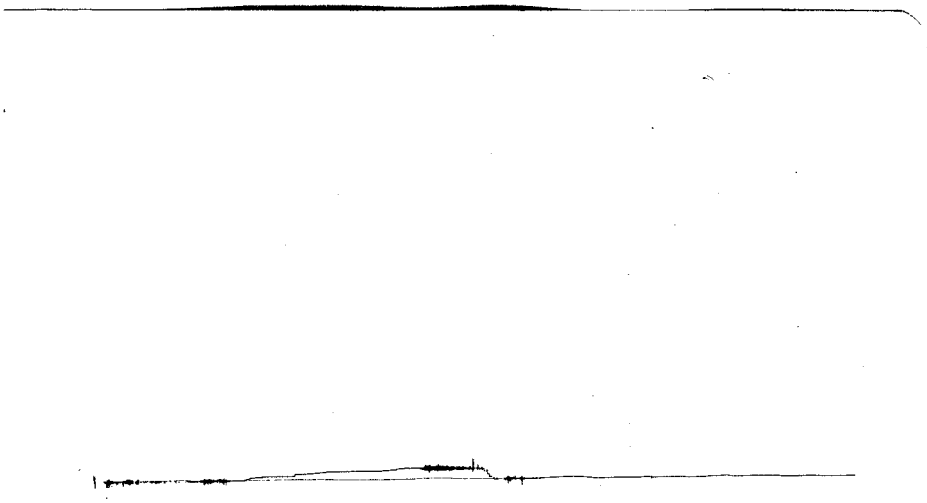
BAKER SERVICE TOOLS

Quintana Petroleum Corp.	Caballo Unit Federal #2-8	1
Operator	Well Name and No.	DST No.



Recorder Type Kuster K-3
No. 24645 Cap. 4450 psi
Depth 6565 feet
Inside X Clock
Outside Range 24 hrs.

Initial Hydrostatic	A	3118.8
Final Hydrostatic	K	3098.9
Initial Flow	B	66.1
Final Initial Flow	C	84.4
Initial Shut-In	D	1691.3
Second Initial Flow	E	133.6
Second Final Flow	F	140.9
Second Shut-In	G	2052.3
Third Initial Flow	H	
Third Final Flow	I	
Third Shut-In	J	



Recorder Type Kuster K-3
No. 7661 Cap. 4900 psi
Depth 6542 feet
Inside X Clock
Outside Range 24 hrs.

Initial Hydrostatic	A	
Final Hydrostatic	K	
Initial Flow	B	50.1
Final Initial Flow	C	54.5
Initial Shut-In	D	
Second Initial Flow	E	99.8
Second Final Flow	F	116.0
Second Shut-In	G	
Third Initial Flow	H	
Third Final Flow	I	
Third Shut-In	J	

BAKER SERVICE TOOLS

Quintana Petroleum Corp. (Operator) | Caballo Unit Federal #2-8 (Well Name and No.) | 1 (DST No.)

TIME	CHOKE SIZE	SURFACE PRESSURE	FLOW RATE MCF/D	LIQUID	REMARKS
0	1/4"	1"			Opened tool for initial flow:
2		3"			
5		5"			
10		6"			
20		7"			
30		6"			Closed tool for initial shut-in:
15		Dead			
60		Dead			
0		1"			Opened tool for final flow:
15		2"			
30		3"			
60		3"			Closed tool for final shut-in:
10		Dead			
120		Dead			Pulled tool:

BAKER SERVICE TOOLS

SAMPLER REPORT

Company: Quintana Petroleum Corp. Date: 8/3/88

Well Name & No.: Caballo Unit Federal #2-8 Ticket No.: 80700

County: San Juan State: Utah

Test Interval: 6588'- 6618' DST No.: 1

Pressure in Sampler: 400 psig

Total Volume of Sampler: 2100 cc.

Total Volume of Sample: 2100 cc.

Oil: None cc.

Water: 1500 cc.

Mud: 600 cc.

Gas: None cu. ft.

Other: None

Sample R W: .10 @ 65°F- .05 @ Res Temp = 80,342 ppm NaCl., 48,840 ppm Cl.

Resistivity

Make Up Water @ °F of Chloride Content ppm.

Mud Pit Sample 2.0 @ 65 °F of Chloride Content 3,000 ppm.

Gas/Oil Ratio Gravity °API @ °F

Where was sample drained On Location.

Remarks:

BAKER SERVICE TOOLS

Quintana Petroleum Corp.	Caballo Unit Federal #2-8	1
Operator	Well Name and No.	DST No.

RECORDER NO. 16815 DEPTH 6610 FT.

INITIAL FLOW

DT(MIN)	PRESSURE(PSIG)
0	95.4
5	95.0
10	94.5
15	94.1
20	97.8
25	103.1

RECORDER NO. 16815 DEPTH 6610 FT.

FINAL FLOW

DT(MIN)	PRESSURE(PSIG)
0	150.1
5	152.4
10	152.8
15	153.7
20	153.8
25	154.2
30	155.1
35	156.3
40	156.4
45	156.5
50	157.8
55	158.4
60	159.6

BAKER SERVICE TOOLS

Quintana Petroleum Corp.	Caballo Unit Federal #2-8	1
Operator	Well Name and No.	DST No.

RECORDER NO. 16815 DEPTH 6610 FT.

INITIAL SHUT-IN

INITIAL FLOW TIME: T = 25 MIN.

DT(MIN)	LOG((T+DT)/DT)	PRESSURE(PSIG)	DP(PSIG)
0		103.1	0.0
1	1.415	109.6	6.5
2	1.130	114.8	11.7
3	0.970	120.8	17.7
4	0.860	126.5	23.4
5	0.778	132.5	29.4
6	0.713	138.7	35.6
7	0.660	145.3	42.2
8	0.615	152.1	49.0
9	0.577	158.9	55.7
10	0.544	165.4	62.3
12	0.489	182.0	78.9
14	0.445	201.0	97.9
16	0.409	220.1	117.0
18	0.378	245.4	142.3
20	0.352	272.1	168.9
22	0.330	301.7	198.6
24	0.310	339.7	236.6
26	0.293	386.3	283.2
28	0.277	429.5	326.4
30	0.263	484.0	380.9
35	0.234	668.9	565.8
40	0.211	907.7	804.6
45	0.192	1153.7	1050.6
50	0.176	1387.9	1284.8
55	0.163	1568.2	1465.1
60	0.151	1700.8	1597.6

EXTRAPOLATED PRESSURE: INDETERMINATE

BAKER SERVICE TOOLS

Quintana Petroleum Corp.	Caballo Unit Federal #2-8	1
Operator	Well Name and No.	DST No.

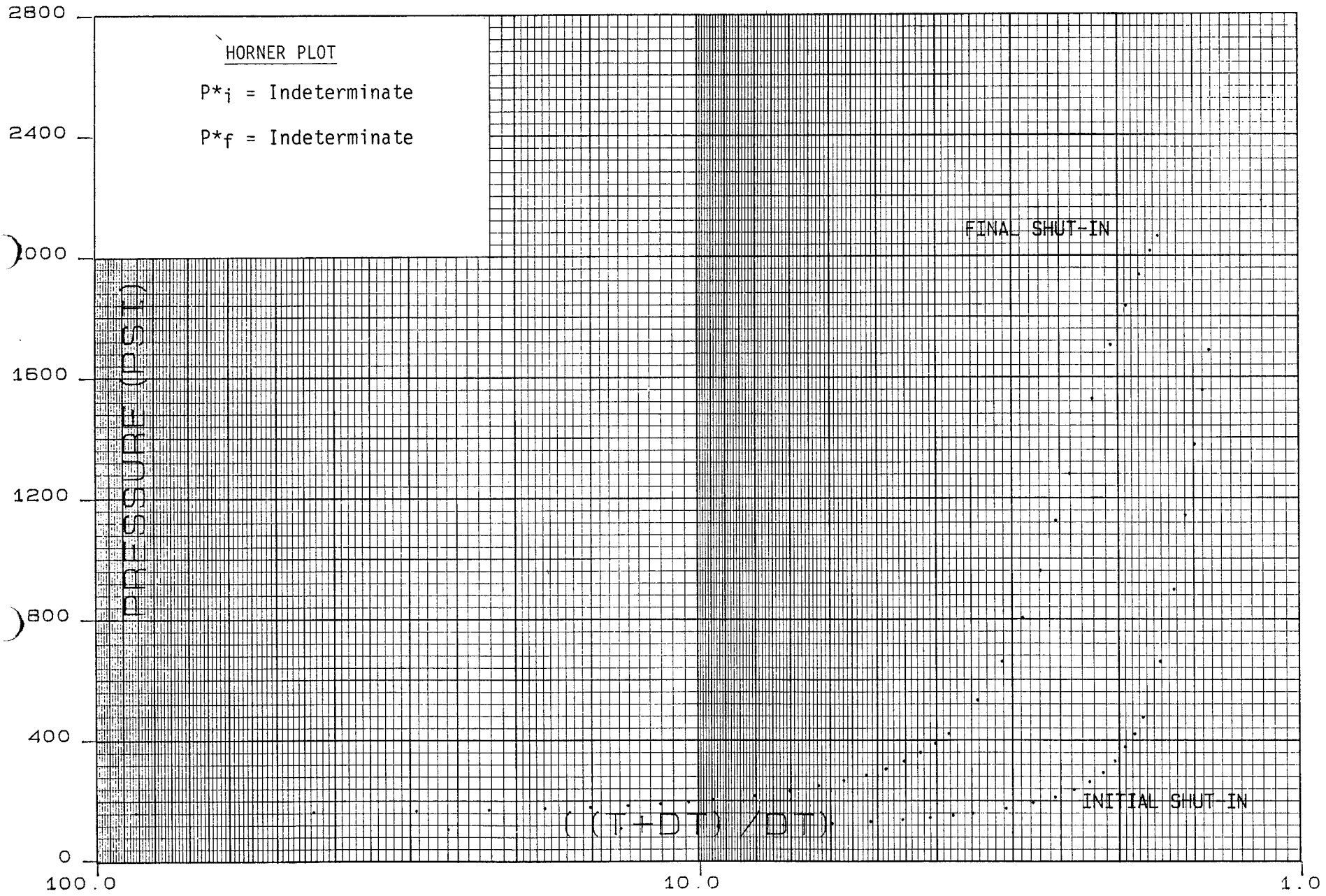
RECORDER NO. 16815 DEPTH 6610 FT.

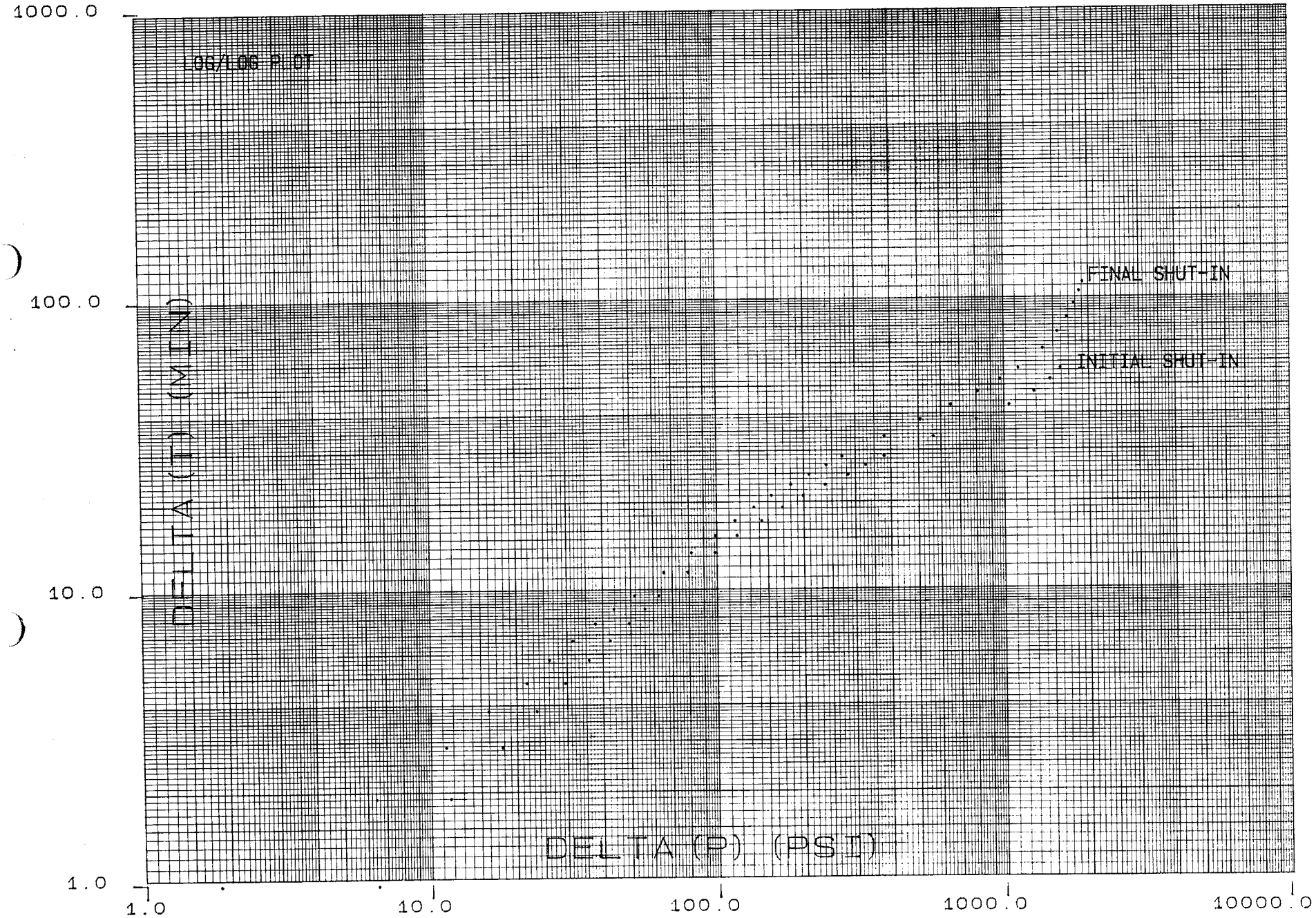
FINAL SHUT-IN

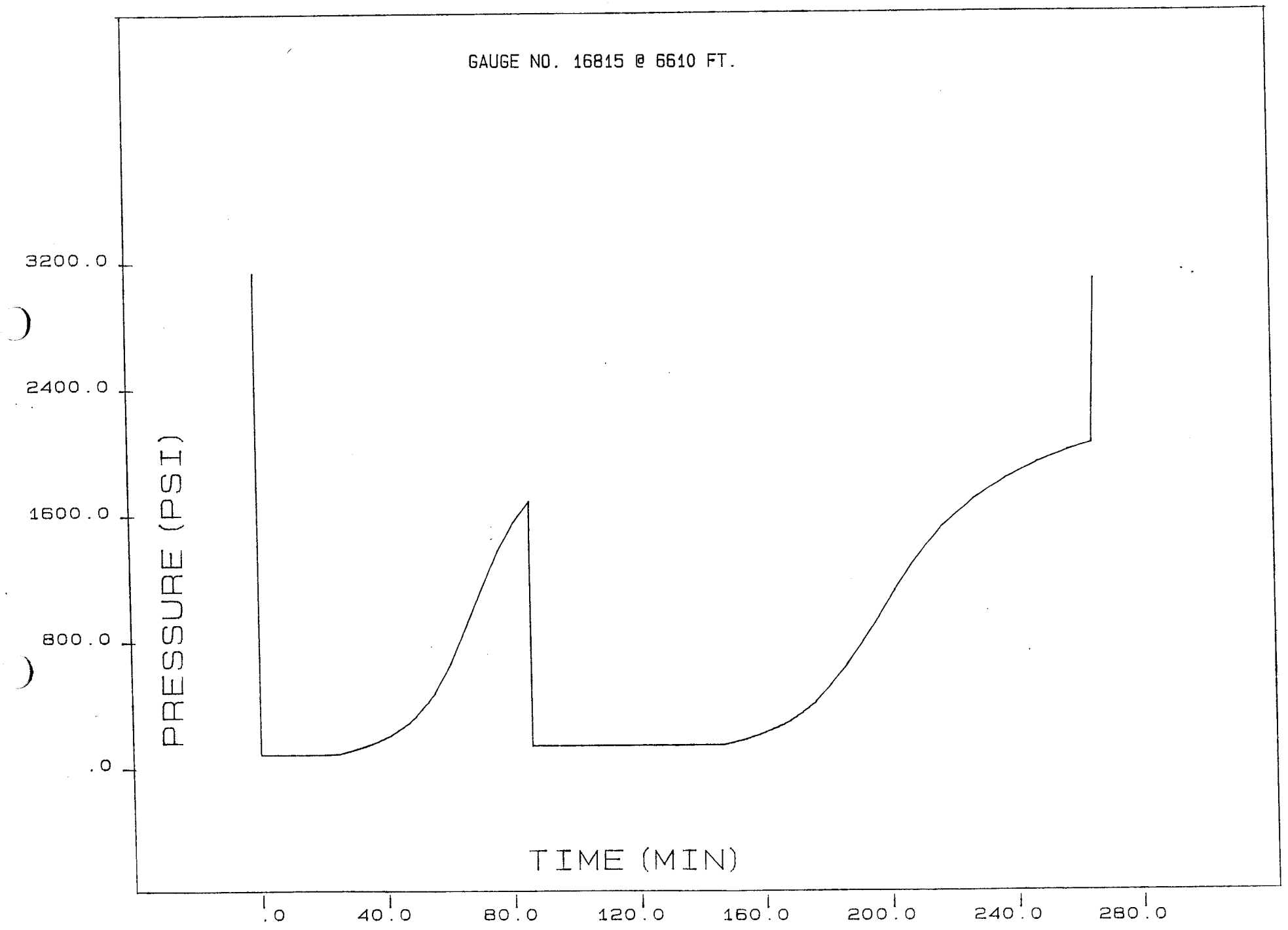
TOTAL FLOW TIME: T = 85 MIN.

DT(MIN)	LOG((T+DT)/DT)	PRESSURE(PSIG)	DP(PSIG)
0		159.6	0.0
1	1.934	161.5	1.8
2	1.638	166.0	6.4
3	1.467	170.9	11.3
4	1.347	175.5	15.9
5	1.255	181.2	21.6
6	1.181	185.5	25.9
7	1.119	190.9	31.3
8	1.065	197.1	37.5
9	1.019	203.1	43.5
10	0.978	211.0	51.4
12	0.908	224.5	64.9
14	0.850	240.8	81.2
16	0.800	258.1	98.5
18	0.758	274.6	115.0
20	0.720	293.3	133.7
22	0.687	313.6	154.0
24	0.657	339.4	179.7
26	0.630	368.0	208.4
28	0.606	398.5	238.9
30	0.584	430.4	270.8
35	0.535	540.7	381.0
40	0.495	668.7	509.1
45	0.461	813.3	653.7
50	0.431	969.2	809.6
55	0.406	1136.1	976.5
60	0.383	1291.1	1131.5
70	0.345	1539.3	1379.6
80	0.314	1716.6	1557.0
90	0.289	1847.0	1687.4
100	0.267	1949.6	1790.0
110	0.249	2028.9	1869.3
118	0.236	2077.0	1917.4

EXTRAPOLATED PRESSURE: INDETERMINATE


HORNER PLOT
P*i = Indeterminate
P*f = Indeterminate
FINAL SHUT-IN
INITIAL SHUT-IN
PRESSURE (psig)
((T+DT)/DT)
2800
2400
1600
1200
400
0
100.0
10.0
1.0


LOG/LOG PLOT
1000.0
100.0
10.0
1.0
DELTA (T) (HRS)
FINAL SHUT-IN
INITIAL SHUT-IN
1.0
10.0
100.0
1000.0
10000.0
DELTA (P) (PSI)


GAUGE NO. 16815 @ 6610 FT.
3200.0
2400.0
1600.0
800.0
.0
PRESSURE (PSI)
TIME (MIN)
.0
40.0
80.0
120.0
160.0
200.0
240.0
280.0

Phone (303) 573-8027

BAKER SERVICE TOOLS

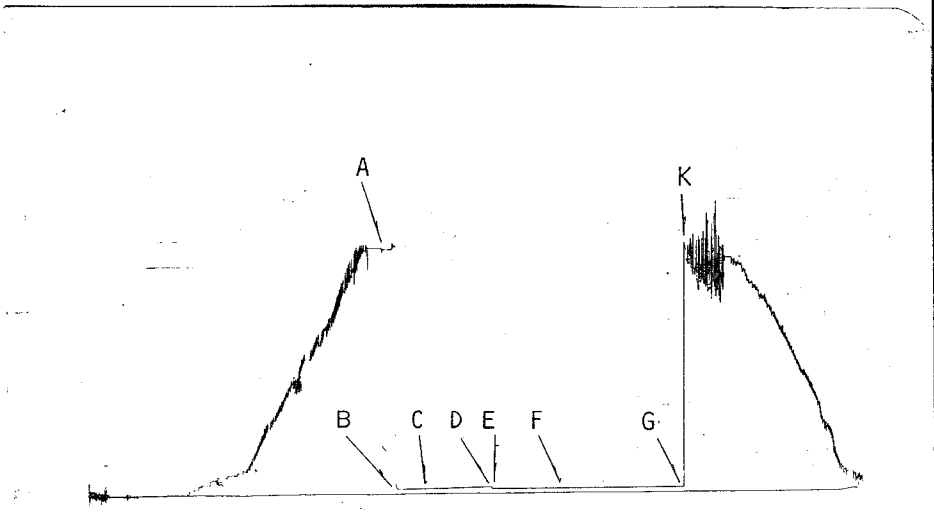
1616 Glenarm — Suite 1350
Denver, CO 80202

Operator: QUINTANA PETROLEUM CORP.
Ticket No.: 80701
Date: 8/5/88
Well Name & No.: "TIGHT HOLE"
Location: CABALLO UNIT FEDERAL #2-8
County, State: S-8 T-36S R-23E SAN JUAN COUNTY, UT
DST No.: 2
Interval: 6796'- 6828'
Formation: DESERT CREEK

Contractor	Four Corners Drlg.
Rig No.	3
Spot	--
Sec.	8
Twp.	36 S
Rng.	23 E
Field	Wildcat
County	San Juan
State	Utah
Elevation	6401' KB
Formation	Desert Creek

Surface Choke	1/4"
Bottom Choke	3/4"
Hole Size	8 3/4"
Core Hole Size	--
DP Size & Wt.	4 1/2" 16.60
Wt. Pipe	4 1/2" 181'
I.D. of DC	2 1/4"
Length of DC	520'
Total Depth	6828'
Type Test	Conventional
Interval	6796'- 6828'

Mud Type	--
Weight	9.1
Viscosity	50
Water Loss	--
Filter Cake	--
Resistivity	2.0 @ 65 °F
	3,000 Ppm. NaCl
B.H.T.	137 °F
Co. Rep.	Dutch Duckett
Tester	David Dolyniuk
Baker Dist.	Farmington, NM



	REPORTED	CORRECTED
Opened Tool @	10:48	hrs.
Flow No. 1	30	min.
Shut-In No. 1	60	min.
Flow No. 2	60	min.
Shut-In No. 2	120	min.
Flow No. 3	None Taken	min.
Shut-In No. 3	"	" min.

Recorder Type	Kuster K-3
No.	16815
Cap.	6100 psi
Depth	6820 feet
Inside	
Outside	X
Clock Range	12 hrs.

Initial Hydrostatic	A	3292.6
Final Hydrostatic	K	3261.2
Initial Flow	B	65.6
Final Initial Flow	C	70.6
Initial Shut-In	D	88.3
Second Initial Flow	E	62.5
Second Final Flow	F	65.2
Second Shut-In	G	71.4
Third Initial Flow	H	
Third Final Flow	I	
Third Shut-In	J	

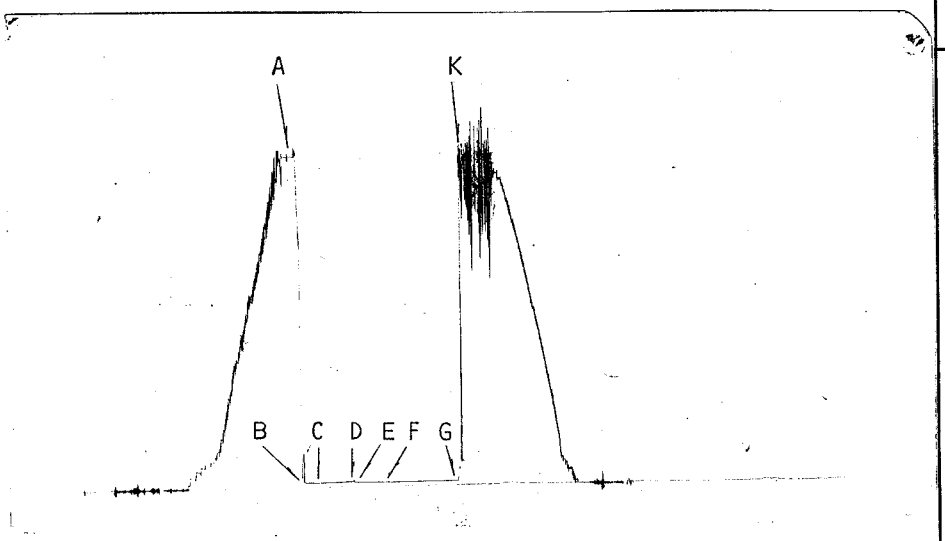
Pipe Recovery: 40' Slightly gas cut mud = 0.20 bbl.

Resistivity: .4 @ 65°F - .20 @ Res Temp = 16,675 ppm NaCl., 10,137 ppm Cl.

Remarks: The charts have not been time/pressure incremented as both shut-in curves have insufficient character to determine reliable extrapolated reservoir pressures and indicate virtually no effective permeability in the formation within the tested interval.

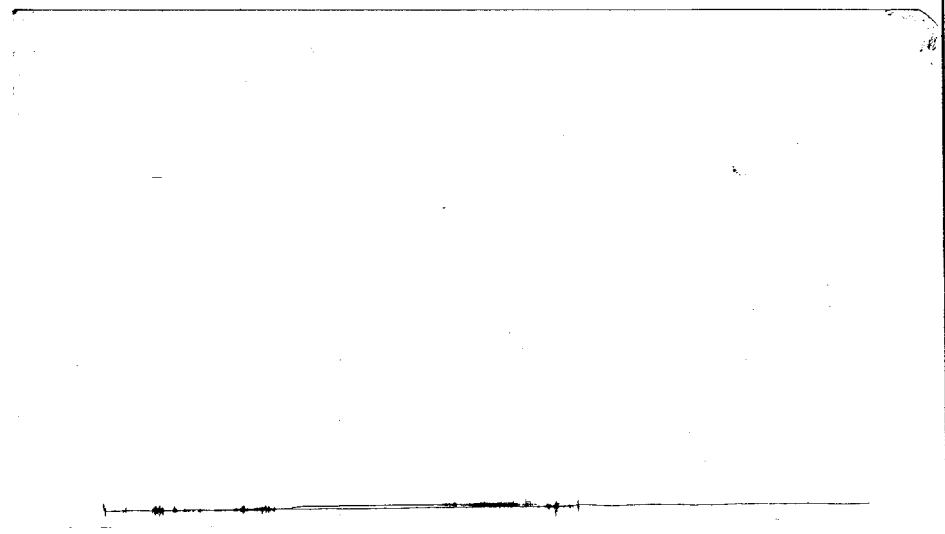
BAKER SERVICE TOOLS

Quintana Petroleum Corp.	Caballo Unit Federal #2-8	2
Operator	Well Name and No.	DST No.



Recorder Type Kuster K-3
No. 24645 Cap. 4450 psi
Depth 6770 feet
Inside X Clock
Outside Range 24 hrs.

Initial Hydrostatic	A	3313.6
Final Hydrostatic	K	3286.7
Initial Flow	B	63.5
Final Initial Flow	C	64.6
Initial Shut-In	D	71.1
Second Initial Flow	E	64.7
Second Final Flow	F	65.4
Second Shut-In	G	66.8
Third Initial Flow	H	
Third Final Flow	I	
Third Shut-In	J	



Recorder Type Kuster K-3
No. 7661 Cap. 4900 psi
Depth 6746 feet
Inside X Clock
Outside Range 24 hrs.

Initial Hydrostatic	A	
Final Hydrostatic	K	
Initial Flow	B	25.5
Final Initial Flow	C	35.6
Initial Shut-In	D	
Second Initial Flow	E	33.2
Second Final Flow	F	36.7
Second Shut-In	G	
Third Initial Flow	H	
Third Final Flow	I	
Third Shut-In	J	

This pressure gauge was run above the tool.

BAKER SERVICE TOOLS

Quintana Petroleum Corp. (Operator) | Caballo Unit Federal #2-8 (Well Name and No.) | 2 (DST No.)

TIME	CHOKE SIZE	SURFACE PRESSURE	FLOW RATE MCF/D	LIQUID	REMARKS
0	1/4"	1"			Opened tool for initial flow:
2		3"			
5		6"			
30		4"			Closed tool for initial shut-in:
15		Dead			
0		1"			Opened tool for final flow:
5		2"			
60		1/2"			Closed tool for final shut-in:
5		Dead			
120		Dead			Pulled tool:

BAKER SERVICE TOOLS

SAMPLER REPORT

Company: Quintana Petroleum Corp. Date: 8/5/88

Well Name & No.: Caballo Unit Federal #2-8 Ticket No.: 80701

County: San Juan State: Utah

Test Interval: 6796'- 6828' DST No.: 2

Pressure in Sampler: 50 psig

Total Volume of Sampler: 2100 cc.

Total Volume of Sample: 2100 cc.

Oil: None cc.

Water: None cc.

Mud: 2100 (slightly gas cut) cc.

Gas: -- cu. ft.

Other: None

Sample R W: .45 @ 65°F- .22 @ Res Temp = 14,678 ppm NaCl., 8,923 ppm Cl.

Resistivity

Make Up Water @ °F of Chloride Content ppm.

Mud Pit Sample 2.0 @ 65 °F of Chloride Content 3,000 ppm.

Gas/Oil Ratio Gravity °API @ °F

Where was sample drained On Location.

Remarks:

BAKER SERVICE TOOLS

DISTRIBUTION OF FINAL REPORTS

Quintana Petroleum Corp. (Operator) — Caballo Unit Federal #2-8 (Well Name and No.)

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P.O. BOX 3331
HOUSTON TX 77253

QUINTANA PETROLEUM CORP. 6
ATTN VICKI
1050 17TH ST. SUITE 400
DENVER CO 80265

STANDARD OIL PRODUCTION CO. 2
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